UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark one)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended September 25, 2022

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________ .

Commission File Number 0-19528

QUALCOMM Incorporated

(Exact name of registrant as specified in its charter)

Delaware	**95-3685934**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
5775 Morehouse Dr., San Diego, California	**92121-1714**
(Address of Principal Executive Offices)	**(Zip Code)**

(858) 587-1121
(Registrant's telephone number, including area code)

	Title of Each Class
Securities registered pursuant to section 12(b) of the Act:	Common stock, $0.0001 par value

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer	☐	Smaller reporting company	☐	Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C.7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant at March 27, 2022 (the last business day of the registrant's most recently completed second fiscal quarter) was $177.1 billion, based upon the closing price of the registrant's common stock on that date as reported on the NASDAQ Global Select Market.

The number of shares outstanding of the registrant's common stock was 1,121 million at October 31, 2022.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Definitive Proxy Statement for its 2023 Annual Meeting of Stockholders, to be filed with the Commission subsequent to the date hereof, are incorporated by reference into Part III of this Annual Report where indicated.

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Risk Factors Summary:

Our business is subject to numerous risks and uncertainties, including those described in "Part I, Item 1A, Risk Factors" of this Annual Report. These risks include, but are not limited to, the following:

RISKS RELATED TO OUR OPERATING BUSINESSES

- *We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected.*
- *Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products).*
- *A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.*

RISKS RELATED TO NEW INITIATIVES

- *Our growth depends in part on our ability to extend our technologies and products into new and expanded product areas, and industries and applications beyond mobile handsets. Our research, development and other investments in these new and expanded product areas, industries and applications, and related technologies and products, as well as in our existing technologies and products, and new technologies, may not generate operating income or contribute to future results of operations that meet our expectations.*
- *We may engage in acquisitions and other strategic transactions or make investments, or be unable to consummate planned strategic acquisitions, which could adversely affect our results of operations or fail to enhance stockholder value.*

RISKS RELATED TO SUPPLY AND MANUFACTURING

- *We depend on a limited number of third-party suppliers for the procurement, manufacture, assembly and testing of our products manufactured in a fabless production model. If we fail to execute supply strategies that provide supply assurance, technology leadership and reasonable margins, our business and results of operations may be harmed. We are also subject to order and shipment uncertainties that could negatively impact our results of operations.*
- *There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model; environmental compliance and liability; impacts related to climate change; exposure to natural disasters, health crises, geopolitical conflicts and cyber-attacks; timely supply of equipment and materials; and various manufacturing issues.*

RISKS RELATED TO CYBERSECURITY OR MISAPPROPRIATION OF OUR CRITICAL INFORMATION

- *Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information.*

RISKS RELATED TO HUMAN CAPITAL MANAGEMENT

- *We may not be able to attract and retain qualified employees, and our attempts to operate under a hybrid work model may not be successful.*

RISKS SPECIFIC TO OUR LICENSING BUSINESS

- *The continued and future success of our licensing programs requires us to continue to evolve our patent portfolio and to renew or renegotiate license agreements that are expiring.*
- *Efforts by some original equipment manufacturers (OEMs) to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business.*
- *Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations.*

RISKS RELATED TO REGULATORY AND LEGAL CHALLENGES

- *Our business may suffer as a result of adverse rulings in governmental investigations or proceedings or other legal proceedings.*

RISKS RELATED TO INDUSTRY DYNAMICS AND COMPETITION

- *Our revenues depend on our customers' and licensees' sales of products and services based on CDMA, OFDMA and other communications technologies, including 5G, and customer demand for our products based on these technologies.*
- *Our industry is subject to intense competition in an environment of rapid technological change. Our success depends in part on our ability to adapt to such change and compete effectively; and such change and competition could result in decreased demand for our products and technologies or declining average selling prices for our products or those of our customers or licensees.*

RISKS RELATED TO PRODUCT DEFECTS OR SECURITY VULNERABILITIES

- *Failures in our products, or in the products of our customers or licensees, including those resulting from security vulnerabilities, defects or errors, could harm our business.*

RISKS RELATED TO INTELLECTUAL PROPERTY

- *The enforcement and protection of our intellectual property may be expensive, could fail to prevent misappropriation or unauthorized use of our intellectual property, could result in the loss of our ability to enforce one or more patents, and could be adversely affected by changes in patent laws, by laws in certain foreign jurisdictions that may not effectively protect our intellectual property and by ineffective enforcement of laws in such jurisdictions.*
- *Claims by other companies that we infringe their intellectual property could adversely affect our business.*
- *Our use of open source software may harm our business.*

GENERAL RISK FACTORS

- *The COVID-19 pandemic, or a similar health crisis, may impact our business or results of operations in the future.*
- *We operate in the highly cyclical semiconductor industry, which is subject to significant downturns. We are also susceptible to declines in global, regional and local economic conditions generally. Our stock price and financial results are subject to substantial quarterly and annual fluctuations due to these dynamics, among others.*
- *Our business may suffer due to the impact of, or our failure to comply with, the various existing, new or amended laws, regulations, policies or standards to which we are subject.*
- *There are risks associated with our debt.*
- *Tax liabilities could adversely affect our results of operations.*

In this Annual Report, the words “Qualcomm,” “we,” “our,” “ours” and “us” refer only to QUALCOMM Incorporated and its subsidiaries and not any other person or entity. This Annual Report (including but not limited to the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations”) contains forward-looking statements. Words such as “expects,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” “estimates,” “may,” “will,” “would” and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report. Additionally, statements concerning future matters such as our future business, prospects, results of operations, financial condition or research and development or technology investments; new or enhanced products, services or technologies; emerging industries or business models; design wins or product launches; industry, market or technology trends, dynamics or transitions; our expectations regarding future demand or supply conditions or macroeconomic factors; strategic investments or acquisitions, and the anticipated timing or benefits thereof; legal or regulatory matters; U.S./China trade or national security tensions; vertical integration by our customers; competition; and other statements regarding matters that are not historical are also forward-looking statements.

Although forward-looking statements in this Annual Report reflect our good faith judgment, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks and uncertainties and actual results and outcomes may differ materially from the results and outcomes discussed in or anticipated by the forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include without limitation those discussed under “Part I, Item 1A. Risk Factors” below, as well as those discussed elsewhere in this Annual Report. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report. Readers are urged to carefully review and consider the various disclosures made in this Annual Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

PART I

Item 1. Business

We incorporated in California in 1985 and reincorporated in Delaware in 1991. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. Our 52-week fiscal years consist of four equal fiscal quarters of 13 weeks each, and our 53-week fiscal years consist of three 13-week fiscal quarters and one 14-week fiscal quarter. The financial results for our 53-week fiscal years and our 14-week fiscal quarters will not be exactly comparable to our 52-week fiscal years and our 13-week fiscal quarters. Our fiscal years for 2022, 2021 and 2020 included 52 weeks.

Overview

We are a global leader in the development and commercialization of foundational technologies for the wireless industry, including 3G (third generation), 4G (fourth generation) and 5G (fifth generation) wireless technologies and processor technologies including high-performance, low-power computing and on-device artificial intelligence (AI) technologies. Our technologies and products are used in mobile devices and other wireless products. Our inventions have helped power the growth in smartphones and other cellular enabled devices. As a connected processor company, we are scaling our innovations using our one technology roadmap to enable the connected intelligent edge (the next generation of smart devices) across industries and applications beyond handsets, including automotive and the internet of things (IoT). In IoT, our inventions have helped power growth in industries and applications such as consumer (including computing, voice and music and XR), edge networking (including mobile broadband and wireless access points) and industrial (including handhelds, retail, transportation and logistics and utilities). In automotive, our connectivity, digital cockpit and advanced driver assistance and automated driving (ADAS/AD) platforms are helping to connect the car to its environment and the cloud, create unique in-cabin experiences and enable a comprehensive assisted and automated driving solution. We derive revenues principally from sales of integrated circuit products, including our Snapdragon® family of highly-integrated, system-based solutions, and licensing of our intellectual property, including patents and other rights.

The foundational technologies we invent help power the modern mobile experience, impacting how the world connects, computes and communicates. We share these inventions broadly through our licensing programs enabling wide ecosystem access to technologies at the core of mobile innovation, and through the sale of our wireless integrated circuit platforms (also known as integrated circuit products, chips, chipsets or modules) and other products. We collaborate across the ecosystem, including with manufacturers, operators, developers, system integrators, cloud providers, test tool vendors, service providers, governments and industry standards organizations, to enable a global environment of continued progress and growth.

We have a long history of driving innovation. We have played and continue to play a leading role in developing system level inventions that serve as the foundation for 3G, 4G and 5G wireless technologies. This includes technologies such as CDMA (Code Division Multiple Access) and OFDMA (Orthogonal Frequency Division Multiple Access) families of technologies, with the latter encompassing LTE (Long Term Evolution) and 5G NR (New Radio), which are the primary digital technologies currently used to transmit voice or data over radio waves using a public or private cellular wireless network.

We own significant intellectual property, including patents, patent applications and trade secrets, applicable to products that implement any version of CDMA and/or OFDMA technologies. The mobile industry generally recognizes that any company seeking to develop, manufacture and/or sell devices or infrastructure equipment that use CDMA-based and/or OFDMA-based technologies requires a license or other rights to use our patents. We also develop and commercialize numerous other key technologies used in mobile and other wireless devices, and we own substantial intellectual property related to these technologies. Some of these inventions are contributed to and commercialized as industry standards, such as for certain video and audio codecs, Wi-Fi, GPS (Global Positioning System), UWB (ultra-wideband) and Bluetooth®. We have also developed other technologies that are used by wireless devices that are not related to industry standards, such as operating systems, user interfaces, graphics and camera processing functionality, RF (radio frequency), RFFE (radio frequency front-end) and antenna designs, AI and machine learning techniques and application processor architectures. Our patents cover a wide range of technologies across the entire wireless system (including wireless devices and network infrastructure equipment), not just the portion of such patented technologies incorporated into chipsets.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on 3G/4G/5G and other technologies, including RFFE, for use in mobile devices; automotive systems for connectivity, digital cockpit and ADAS/AD; and IoT including consumer electronic devices; industrial devices; and edge networking products. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including QGOV (Qualcomm Government Technologies) and our cloud AI inference processing initiative.

Industry Trends

As the largest technology platform in the world, mobile has transformed the way we connect, compute and communicate. Advanced connectivity and high-performance, low-power computing technologies from mobile are also impacting industries beyond wireless, empowering new services, new business models and new ways to engage and interact with customers. Our breakthrough inventions, along with our licensing programs, have been integral to the growth and evolution of the mobile industry.

Connected Intelligent Edge. Advancements in processor technologies have allowed for new levels of on-device processing (also known as edge computing). Edge computing brings processing closer to where data is generated, helping to reduce response time, improve security and enable greater personalization. As 5G and other forms of wireless connectivity converge with high-performance, low-power processing and on-device intelligence, devices at the edge are able to share data with cloud-based applications and each other. This is enabling expanded functionality and use cases, which we believe will have significant impact across industries. It is leading to the creation of the connected intelligent edge, where we expect billions of smart devices to be deployed.

Advancing Connectivity. 3G technology introduced the world to the potential of the mobile internet, and the ability to access the internet virtually anytime and anywhere. 4G brought mobile broadband speeds that helped fuel the smartphone era, forever changing the way we work, live and connect with others. 4G has become the foundational technology to many of the applications and services used today, including e-commerce, video streaming, video calling, social media and gaming.

Building on foundational innovations developed for 3G and 4G, the mobile industry continues to quickly move to 5G technology. Beginning with the Release 15 specification issued by 3GPP (3rd Generation Partnership Project), an organization that develops technical specifications, 5G is designed to support multi-gigabit data rates, low latency and greater capacity than previous generations of mobile technology to enable enhanced mobile broadband experiences, including ultra-high definition (4K) video streaming and sharing, near-instantaneous access to cloud services, immersive cloud gaming and extended reality (XR), which includes augmented reality (AR), virtual reality (VR) and mixed reality (MR). 5G's performance and capacity improvements are also enabling operators to offer new consumer and enterprise services while also reducing their operating costs.

Although 5G networks are being deployed at a faster pace as compared to the transition from 3G to 4G networks, as with previous generations of mobile networks, it will take time. Since the first commercial 5G networks were launched in April 2019, 226 operators in more than 90 countries have commercially launched 5G, with more than 500 operators investing to deploy the technology as of September 30, 2022 (GSA, October 2022). Many 5G devices include multimode support for 3G, 4G and Wi-Fi technologies, enabling service continuity where 5G has yet to be deployed. This allows mobile operators to utilize existing 3G and/or 4G network infrastructure, enabling operators to roll out 5G services over time, while also helping to maximize previous generation equipment investments. As of September 30, 2022, there were approximately 7.5 billion 3G/4G/5G connections globally, representing 88% of total mobile connections (GSMA Intelligence, October 2022). By 2026, global 3G/4G/5G connections are projected to reach 8.7 billion, with approximately 86% of these connections in emerging regions and China (GSMA Intelligence, October 2022).

Consumer Demand in Smartphones. For calendar year 2022, we estimate that 3G, 4G, and 5G handset volumes will decrease by low-double digits year-over-year, with 5G smartphone shipments estimated between 600 and 650 million. Such expected decline in demand is primarily driven by the negative effects of the macroeconomic environment and the impact of coronavirus (COVID-19) pandemic measures in China.

Consumer demand for new experiences, combined with the needs of mobile operators and device manufacturers to provide differentiated features and services, is driving continued innovation within the smartphone across connectivity, processing, AI, multimedia, imaging, audio and more. As a result, the smartphone continues to be the go-to device for social networking, music and video streaming, photography and video capture, e-commerce, gaming, email, web browsing and more. 5G enables these experiences to be more immersive, intuitive and interactive.

Transforming Other Industries: Automotive. According to analyst data, more than 70% of new vehicles produced in 2028 are projected to have embedded cellular connectivity, with 60% of cellular connected vehicles featuring 5G connectivity. By comparison, 60% of vehicles produced in 2021 had embedded cellular connectivity, with 5G connectivity expected to ramp in 2023 (Strategy Analytics, October 2022).

Digitalization of the automotive cockpit continues to transform the in-vehicle experience, enabling greater personalization of content and settings for both drivers and passengers as automakers respond to growing interest from consumers to bring their digital lifestyles into the vehicle. Car-to-cloud platforms are helping automakers improve cost efficiencies, create new service opportunities throughout the lifecycle of a vehicle with over-the-air (OTA) update capabilities and valuable vehicle and usage analytics. This is driving the development of a new architecture for the software-defined vehicle. High-performance, low-power computing technologies from mobile are being used to improve vehicles with advanced driver assistance and automated driving features that we expect to scale across vehicle tiers and continue the progression toward higher levels of autonomy, safety and convenience. Analysts estimate that 19% of new vehicles sold globally in 2025 will have Level 2 (i.e., partial driving automation) or higher autonomy, compared to an estimated 9% of new vehicles sold globally in 2022 (Strategy Analytics, October 2022).

Transforming Other Industries: IoT. Demand for connected devices beyond smartphones continued to grow across consumer, edge networking and industrial applications in fiscal 2022, in part due to the expanded use cases enabled by 5G technologies. The installed base of IoT devices, which includes everything from wearables to industrial handhelds to gateways, is projected to more than double between 2022 and 2026 to over 27 billion (IoT Analytics, October 2022). The growth in IoT devices is an important catalyst in driving digital transformation across industries.

Consumer. Consumer IoT products continue to adopt the latest mobile connectivity, processing and intelligence technologies, including personal computing (e.g., tablets and personal computers), connected audio (e.g., wireless earbuds, speakers and soundbars), wearables (e.g., smart watches), XR devices (e.g., VR headsets and AR glasses) and others (e.g., camera and video collaboration, exercise equipment and home appliances). This is enabling new services, applications and experiences.

Edge Networking. Growth in demand for connected devices, the transition to hybrid work environments and advances in wireless technology are driving increased demand for edge networking products (including mobile broadband and wireless access points). 5G provides the flexibility to support both mobile and fixed wireless users with the delivery of high-speed, low-latency connections, enabling operators to replace traditional "last-mile" wired broadband connections. Additionally, advancements in Wi-Fi are driving consumer and enterprise demand for the latest Wi-Fi 6 and 6E access point technologies that leverage increased network speed, capacity and efficiency to support the increased number of connected devices at home and at work.

Industrial. The combination of IoT devices with connectivity, computing and on-device AI along with the cloud are helping to bring near real-time data and insights in industries such as retail, transportation, logistics, mining and energy. This allows companies to gain new knowledge and insights about their products and services, manufacturing processes and more, which should help to transform, optimize and innovate their business.

Technology Overview

The worldwide demand for wireless devices, data services and applications requires continuous innovation to improve the user experiences, support new services, increase network capacity, make use of different frequency bands and allow for dense network deployments. To meet these requirements, different wireless communications technologies continue to evolve. We have a long history of investing heavily in research and development and have developed foundational technologies, including CDMA and OFDMA, that help drive the continued evolution of the wireless industry. As a result, we have developed and acquired (and continue to develop and acquire) significant related intellectual property. This intellectual property has been incorporated into the most widely accepted and deployed cellular wireless communications technology standards, and we have licensed it to several hundred licensees, including all of the leading handset manufacturers.

Cellular Wireless Technologies. Relevant cellular wireless technologies can be grouped into the following categories.

CDMA-based. CDMA-based technologies are characterized by their access method allowing several users to share the same frequency and time by allocating different orthogonal codes to individual users. Most of the CDMA-based technologies are classified as 3G technology and provide vastly improved capacity for voice and low-rate data services as compared to analog technologies and significant improvements over earlier technologies (e.g., 2G technology). CDMA-based connections worldwide continue to decline as consumers migrate to OFDMA-based technologies, which comprise the majority of total cellular connections today.

OFDMA-based. OFDMA-based technologies are characterized by their access method allowing several users to share the same frequency band and time by allocating different subcarriers to individual users. Most of the OFDMA-based technologies deployed prior to 2020 are classified as 4G technology. 3GPP developed the 4G system through the specification of the radio component (LTE) and the core network component (Enhanced Packet Core or EPC). The principal benefit of LTE is its ability to leverage a wide range of spectrum (bandwidths of up to 20 MHz or more through aggregation). LTE is designed to seamlessly interwork with 3G technologies through multimode devices. LTE Advanced brings many more enhancements, including carrier aggregation, advanced multi-antenna techniques and optimizations for small cells. 5G heavily leverages OFDMA-based technologies; 3GPP has developed the 5G system through the specification of the radio component (NR) and the core network component (5G Core or 5GC). Unlike 4G that has fixed Orthogonal Frequency Division Multiplexing (OFDM) parameterization, 5G has multiple OFDM parameterizations to address a wide range of spectrum and use cases. We continue to play a significant role in the further development and commercialization of LTE-based technologies.

Beginning with Release 14, 3GPP specifications provide enhancements specifically for C-V2X (cellular vehicle-to-everything), which includes both direct communication (vehicle-to-vehicle, vehicle-to-infrastructure and vehicle-to-pedestrian) in dedicated spectrum that is independent of a cellular network and cellular communications with networks in traditional mobile broadband licensed spectrum.

The wireless industry is actively developing and commercializing 5G technologies. The first 5G standard was initially completed in 2018. 5G is designed to transform the role of wireless technologies and incorporates advancements on 3G/4G features, including device-to-device capabilities and the use of all different types of spectrum (including licensed, unlicensed and shared spectrum). Many of our inventions at the core of 3G and 4G serve as the foundational technologies for 5G, and we continue to play a significant role in driving advancements in 5G, including contributing to 3GPP standardization activities that are defining the continued evolution of 5G NR and 5GC standards.

5G has the ability to target diverse services with very different technical requirements (from enhanced mobile broadband to massive IoT to mission critical services), utilize diverse types of spectrum (from low bands to millimeter wave (mmWave) bands) and support diverse types of deployment scenarios. Predominant technological components of 5G include ultra-reliable, low-latency communication, very wide channel bandwidth and new channel coding schemes to efficiently support large data blocks, MIMO (multiple input, multiple output) to increase coverage and network capacity and mobile mmWave to increase the data rate offered to users. As with previous cellular generations, 5G is designed to support seamless compatibility with 3G/4G technologies through multimode devices.

Subsequent to the initial specification of 5G in 3GPP Release 15, the 3GPP has completed two additional releases. Release 16 introduced enhancements to 5G mobile broadband experiences (e.g., more capacity, improved coverage, mobility and better device power efficiency), expanded 5G technologies into new use cases and industries and began supporting different spectrum types by expanding 5G into unlicensed spectrum with 5G NR Unlicensed (NR-U). Release 17 became the third major release of the global 5G NR standard expanding the 5G technology foundations for coverage, mobility, power and reliability, which is designed to provide efficient support for lower complexity 5G devices including wearables, industrial sensors, and new deployments, including non-terrestrial networks and mmWave private networks on unlicensed 60 GHz spectrum band. Release 18, which is now under development, marks the start of 5G Advanced, with projects designed to strengthen the end-to-end 5G system foundation (such as advanced downlink and uplink MIMO, enhanced mobility, mobile integrated access and backhaul, smart repeater, evolved duplexing, AI and machine learning data-driven designs and green networks) and to proliferate 5G to virtually all devices and use cases (such as boundless extended reality, NR-light evolution, expanded sidelink, expanded positioning, drones and expanded satellite communication and multicast).

Other (Non-Cellular) Wireless Technologies. There are other, non-cellular wireless technologies that have also been widely adopted.

Wireless Local Area Networks. Wireless Local Area Networks (WLAN), such as Wi-Fi, link two or more nearby devices wirelessly and usually provide connectivity through an access point. We are actively involved in innovative programs developed in the context of the Wi-Fi Alliance, a non-profit organization that drives global Wi-Fi adoption and evolution. Wi-Fi systems are based primarily on standards developed by the Institute of Electrical and Electronics Engineers 802.11 Working Group. Amendments of the 802.11 standard are commonly referred to by the names made popular by the Wi-Fi Alliance (for example, 802.11ax is known as Wi-Fi 6). Wi-Fi 6 adds advanced features such as downlink and uplink OFDMA and uplink multiple-user MIMO. This technology primarily targets connectivity for mobile devices, tablets, laptops and other consumer electronic devices using the 2.4GHz and 5GHz spectrum bands. We continue to play a leading role in the evolution of the 802.11 family of standards with the development of the new 802.11be standard, which is expected to be known as Wi-Fi 7.

Bluetooth. Bluetooth is a wireless personal area network that provides wireless connectivity between devices over short distances ranging from a few centimeters to approximately one hundred meters using the 2.4GHz industrial, scientific and medical spectrum band. Bluetooth technology provides wireless connectivity to a wide range of fixed or mobile consumer electronic devices. Bluetooth functionalities are standardized by the Bluetooth Special Interest Group in various versions of the specification (Bluetooth Core specification versions range from 1.0 to 5.3), which include different functionalities, such as enhanced data rate, low energy, mesh, audio, telephony, automotive, human interface device and location technologies. We are a leading contributor to Bluetooth technologies in the areas of mobile devices and audio and mesh technologies.

Location Positioning Technologies. Location positioning technologies continue to evolve in order to deliver an enhanced commercial location experience and comply with new mandates on location for E911 (enhanced 911) calls. We are a key developer of the Assisted-GPS (A-GPS), Assisted Global Navigation Satellite System (A-GNSS) and WLAN positioning technologies used in most cellular handsets today. For uses requiring the best reliability and accuracy for E911 services and navigational based services, A-GPS, A-GNSS and WLAN provide leading-edge solutions. We continue to invest in the standardization and productization of many 4G- and 5G-based positioning capabilities, including in 3GPP Releases 16, 17 and 18.

The industry continues to evolve to support additional inputs for improving the location experience. Our products and intellectual property now support multiple constellations for A-GNSS, including: GPS, GLONASS, Galileo, NavIC and BeiDou; Wi-Fi-based and Bluetooth-based positioning for WLAN, including Wi-Fi RSSI (received signal strength indication) and Wi-Fi RTT (round-trip time) signals for indoor location; observed time difference of arrival positioning for LTE access (e.g., in rural and indoor areas); and third-party inertial sensors. The combination of these different location solutions is used to ensure accurate location availability in all areas. We are also a leader in the standardization of high accuracy position techniques for 5G NR access and support techniques to improve resilience of location.

Additional Significant Technologies used in Cellular and Certain Consumer Electronic Devices and Networks.

Multimedia Technologies. We are a leading innovator in video, audio and speech compression technologies and system-level solutions enabling feature-rich, high-quality experiences in imaging, audio and vision intelligence. We are a leading contributor to the advancement of video compression performance, including contributions to the H. 265/HEVC standard (deployed to support Ultra High Definition 4K and beyond video), the next generation H.266/ VVC standard and the MPEG-5 EVC (Essential Video Coding) standard, which are designed to power the creation and consumption of richer, immersive media experiences. Proprietary video codecs, including VP9 and AV1, have also adopted our contributions due to their impact to video compression technology. Video compression technologies are used in a number of products such as cellular handsets, tablets, laptops and desktop computers, cameras, servers, gaming consoles and televisions.

We have developed additional significant multimedia technologies, including: camera and imaging technologies; vision intelligence technologies, which enable advanced use cases such as smart image processing, AR/VR and robotics; visual augmentation and frameworks and audio frameworks, both of which allow for human-machine interfaces; speech compression innovations; and spatial audio processing and coding enabling compression and rendering of immersive audio.

Other Technologies. In addition to the above, we have played and continue to play a leading role in developing and/or have acquired many of the other technologies used across the wireless system, computing and edge networking, including in cellular handsets and certain other consumer electronic devices and networks, including:

- on-device AI features, including machine learning platforms and the application of AI and machine learning techniques to edge computing and other use cases;
- operating system and user interface features;
- XR platform features such as 6DoF (six-degrees of freedom) head tracking and controller capabilities, 3D Reconstruction, 3D audio and video pass-through and embedded cellular connectivity for new types of user experiences;
- security and content protection systems for enhanced device security without compromising the user experience and ultrasonic fingerprint readers for single touch authentication;
- volatile (LP-DDR4, 5) and non-volatile (eMMC) memory and related controllers;
- fast charging features, enabling devices to charge quickly, safely and efficiently;
- Qualcomm® Smart Transmit™ technology, a modem-to-antenna technology that optimizes data speeds while complying with RF transmit power limits;
- power management systems for improved battery life and device charging; and
- SoC architecture with heterogeneous computing features, which uses different types of specialized engines (Graphics Processing Unit (GPU)) to enable high performance and low-power computing and other optimization techniques.

Acquisitions

We make strategic investments and acquisitions in order to open new opportunities for our technologies, support the design and introduction of new products and services (or enhance existing products or services), obtain development resources, grow our patent portfolio or pursue new businesses as part of our strategic plan. Information regarding our acquisitions is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 9. Acquisitions.”

Operating Segments

We have three reportable segments. We conduct business primarily through QCT and QTL, while QSI makes strategic investments. Additional information regarding our operating segments is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information."

QCT Segment. QCT is a leading developer and supplier of integrated circuits and system software based on 3G/4G/5G and other technologies for use in wireless voice and data communications, networking, computing, multimedia and GPS products. QCT's integrated circuit products are sold and its system software is licensed to manufacturers that use our products in a broad range of devices, from low-tier, entry-level devices primarily for emerging regions to premium-tier devices, including but not limited to mobile devices, wireless networks, devices used in IoT, broadband gateway equipment, consumer electronic devices and automotive systems for connectivity, digital cockpit and advanced driver assistance and automated driving. Our one technology roadmap delivers the latest network technologies across multiple product tiers and devices. This roadmap is the result of extensive collaboration with manufacturers, operators, developers, systems integrators, cloud providers, tool vendors, service providers, governments and industry standards organizations, as well as our years of research into emerging network standards and the development of integrated circuits. Our roadmap takes advantage of new standards, while maintaining backward compatibility with existing standards. We have leveraged and expect to continue to leverage the foundational technologies initially developed and commercialized for use in mobile handset devices, such as our core baseband modem and processor technologies and our other wireless connectivity products including Wi-Fi, Bluetooth and precise positioning technologies, to extend into product categories, industries and applications beyond mobile handsets, such as automotive and IoT (which includes the industries and applications of consumer, industrial and edge networking).

The Snapdragon family of highly integrated, system-based solutions include the Snapdragon mobile, compute, sound and automotive platforms. Each platform consists of application processors and wireless connectivity capabilities, including our cellular modem that provides core baseband modem functionality for voice and data communications, non-cellular wireless connectivity (such as Wi-Fi and Bluetooth) and global positioning functions. Our Snapdragon application processor functions include CPU, security, graphics, display, audio, video, camera and AI. Our CPUs are designed to deliver high levels of compute performance with optimized power consumption. Our Qualcomm® Hexagon™ processors are designed to support a variety of signal processing applications, including AI, audio and sensor processing. Our Qualcomm® Adreno™ graphics processing units are designed to deliver high quality graphics performance for visually rich 3D gaming and user interfaces. In addition to the highly integrated core SoC, we also design and supply supporting components, including the RF transceiver, PM (power management), audio, codecs, speaker amps and additional wireless connectivity integrated circuits. These supporting components, in addition to our cellular modems and application processors comprising our core SoC, are also sold as individual components. The combination of the Snapdragon SoC, system software and supporting components provide an overall platform with optimized performance and efficiency, enabling manufacturers to design and deliver powerful, slim and power-efficient devices ready for integration with the complex cellular networks worldwide.

Our portfolio of RF products includes Qualcomm® RFFE components that are designed to simplify the RF design for 5G front-end, LTE multimode and multiband mobile devices, including sub-6 GHz and mmWave devices, to reduce power consumption and to improve radio performance. We provide comprehensive RFFE product offerings with system level performance from the modem and transceiver to the antenna that include complex 4G/5G transmit and receive modules, power tracking, tuning systems, multimode-multiband power amplification, low noise amplifiers and mmWave antenna solutions, in addition to discrete filtering products, for devices and applications across the mobile handsets, automotive and IoT industries. We have also integrated our Snapdragon platform with our RFFE components to create our Snapdragon 5G modem-RF products, the world's first commercial modem-to-antenna 5G solution designed to maximize data speeds and performance, support superior call connectivity and coverage and extend battery life.

Our wireless connectivity products also consist of integrated circuits and system software for Wi-Fi, Bluetooth and frequency modulation, as well as technologies that support location data and services, including GPS, GLONASS, Galileo, NavIC and BeiDou. Our wireless connectivity products provide additional connectivity for mobile devices, tablets, laptops, XR headsets, voice and music devices, wearable devices, along with other IoT devices and applications, automotive connectivity, digital cockpit and ADAS/AD, utility meters and logistic trackers and industrial sensors. QCT also offers standalone Wi-Fi, Bluetooth, fingerprint sensor, applications processor and Ethernet products utilized within these devices and systems. Our networking products include Wi-Fi, Ethernet and Powerline chips, network processors, wireless access points and routers, broadband gateway equipment and software. These products help enable home and business networks to support the growing number of connected devices, digital media and data services.

Other than for certain of our RFFE modules and RF filter products, QCT utilizes a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Therefore, we primarily rely on third parties to perform the manufacturing and assembly, and most of the testing, of our integrated circuits based primarily on our proprietary designs and test programs. Our suppliers also are responsible for the procurement of most of the raw materials used in the production of our integrated circuits. Integrated circuits are die cut from silicon wafers that have completed the package assembly and test manufacturing processes. The semiconductor package supports the electrical contacts that connect the integrated circuit to a circuit board. Die cut from silicon wafers are the essential components of all of our integrated circuits and a significant portion of the total integrated circuit cost. We employ both turnkey and two-stage manufacturing models to purchase our integrated circuits. Under the turnkey model, our foundry suppliers are responsible for delivering fully assembled and tested integrated circuits. Under the two-stage manufacturing model, we purchase die in singular or wafer form from semiconductor manufacturing foundries and contract with separate third parties for manufacturing services such as wafer bump, probe, assembly and the majority of our final test requirements. The primary foundry suppliers for our various digital, analog/mixed-signal, RF and PM integrated circuits are Global Foundries, Samsung Electronics, Semiconductor Manufacturing International Corporation (SMIC) and Taiwan Semiconductor Manufacturing Company (TSMC). Our primary semiconductor assembly and test suppliers are Advanced Semiconductor Engineering, Amkor Technology, Siliconware Precision Industries and STATSChipPAC. The majority of our foundry and semiconductor assembly and test suppliers are located in the Asia-Pacific region.

QCT primarily uses internal fabrication facilities to manufacture certain RFFE modules and RF filter products, and our manufacturing operations consist of front-end and back-end processes. The front-end processes primarily take place at manufacturing facilities located in Germany and Singapore and involve the imprinting of substrate wafers with the structure and circuitry required for the products to function (also known as wafer fabrication). The back-end processes include the assembly, packaging and test of RFFE modules and RF filter products and their preparation for distribution. Our back-end manufacturing facilities are located in China and Singapore.

QCT's sales are primarily made through supply terms which implement a purchase order and order confirmation process for delivery of products. QCT generally allows customers to reschedule delivery dates within a defined time frame and to cancel orders prior to shipment with or without payment of a cancellation fee, depending on when the order is canceled. The industry in which QCT operates is intensely competitive. QCT competes worldwide with a number of U.S. and international designers and manufacturers of semiconductors. As a result of global expansion by foreign and domestic competitors, technological changes, device manufacturer concentrations, limited global supply capacity, vertical integration and the potential for further industry consolidation, we anticipate the industry to remain very competitive. We believe that the principal competitive factors for our products include performance, level of integration, quality, compliance with industry standards, price, time-to-market, system cost, design and engineering capabilities, new product innovation, growth and scaling of distribution channels, desire by certain customers to use multiple suppliers and customer support. QCT also competes in both single-mode and multimode environments against alternative communications technologies. Additional competitive factors exist for QCT product offerings that have expanded into industries and applications beyond mobile handsets, including automotive and IoT. The automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in a significant barrier to entry and may result in increased costs.

QCT's current competitors include, but are not limited to, companies such as Apple, Broadcom, MediaTek, Nvidia, NXP Semiconductors, Qorvo, Samsung, Skyworks, Texas Instruments and UNISOC. QCT currently faces competition, which may intensify in the future, from products internally developed by our customers, including some of our largest customers, to early-stage companies. Our competitors devote significant amounts of their financial, technical and other resources to develop and market competitive products and, in some cases, to develop and adopt competitive digital communication or signal processing technologies, and those efforts may materially and adversely affect us. Although we have attained a significant position in the wireless industry, many of our current and potential competitors may have advantages over us. These and other risks related to competition are more fully described in the Risk Factors entitled "*Our industry is subject to intense competition in an environment of rapid technological change. Our success depends in part on our ability to adapt to such change and compete effectively; and such change and competition could result in decreased demand for our products and technologies or declining average selling prices for our products or those of our customers or licensees*" and *"Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products)."*

QTL Segment. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale and/or use of certain wireless products, including, without limitation, products implementing CDMA2000, WCDMA (Wideband CDMA), LTE and/or OFDMA-based 5G standards and their derivatives. We grant licenses or otherwise provide rights to use our cellular standard-essential patents (including 3G, 4G and 5G) for both single-mode and multimode devices on a worldwide basis. We also offer licenses to our cellular standard-essential patents together with other Qualcomm patents that may be useful to such licensed products for licensees that desire to obtain the commercial benefits of receiving such broad patent rights from us. While we offer license rights to patents that we do not have a duty or obligation to grant, those rights may be negotiated at our discretion. A significant portion of QTL's licensing revenues is derived from licensees that have entered into license agreements that grant licenses under Qualcomm's cellular standard-essential patents. Our licensees manufacture wireless cellular products such as mobile devices (including handsets), other consumer devices (e.g., tablets and laptops), plug-in end user data modem cards and embedded modules for incorporation into machine-to-machine devices and certain other devices, connected vehicle units and connected vehicle modules used in automobiles, wireless access points, small cell wireless products, infrastructure equipment required to establish and operate a cellular network and equipment to test wireless networks and cellular devices.

Since our founding in 1985, we have focused heavily on technology development and innovation. These efforts have resulted in a leading intellectual property portfolio related to foundational, system level technologies for the wireless industry. We have an extensive portfolio of United States and foreign patents, and we continue to pursue patent applications around the world. Our patents have broad coverage in many countries, including Brazil, China, India, Japan, South Korea, Taiwan, the United States and countries in Europe. A substantial portion of our patents and patent applications relate to digital wireless communications technologies, including patents that are essential or may be important to the commercial implementation of CDMA2000, WCDMA (UMTS), LTE and/or OFDMA-based 5G products. Our patent portfolio is the most widely and extensively licensed in the industry, including more than 190 5G license agreements to date. Additionally, we have a substantial patent portfolio related to key technologies used in communications and other devices and/or related services, some of which were developed in industry standards development organizations. These include certain video codecs, audio codecs, Wi-Fi, memory interfaces, wireless power, GPS and positioning, broadcast and streaming protocols, and short-range communication functionalities, including NFC and Bluetooth. Our patents cover a wide range of technologies across the entire wireless system (including wireless devices and network infrastructure equipment), not just the portion of such patented technologies incorporated into chipsets. Over the years, a number of companies have challenged our patent position, but the mobile communications industry generally recognizes that any company seeking to develop, manufacture and/or sell certain wireless products that use CDMA-based and/or OFDMA-based technologies requires a license or other rights to use our patents.

We have licensed or otherwise provided rights to use our patents to hundreds of companies on industry-accepted terms. Our strategy to make our patented technologies broadly available has been a catalyst for industry growth, helping to enable a wide range of companies offering a broad array of wireless products and features while increasing the capabilities of and/or driving down average and low-end selling prices for handsets and other wireless devices. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, encouraging innovative applications, supporting equipment manufacturers with integrated chipset and software products and focusing on improving the efficiency of the airlink for wireless operators, we have helped multimode device capabilities evolve, grow demand and reduce device pricing. 5G network deployments and commercial 3G/4G/5G multimode device sales began in 2019 and have continued. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, we are supporting the global rollout and availability of 5G technology. We believe that 5G will continue to encourage innovative applications through enhanced mobile broadband services with lower latency and multi-gigabit user data speeds and bring more capacity and efficiency to wireless networks.

Upon the initial deployment of OFDMA-based networks, the products implementing such technologies generally have been multimode and implement OFDMA-based and CDMA-based technologies. The licenses granted under our existing license agreements generally cover multimode CDMA/OFDMA (3G/4G/5G) devices, and our licensees are obligated to pay royalties under their license agreements for their sales of such devices.

Standards bodies have been informed that we hold patents that might be essential for all 3G standards that are based on CDMA, patents and pending patent applications that are potentially essential for LTE standards, including FDD and TDD versions, and patents and pending patent applications that are potentially essential for 5G technologies. We have committed to such standards bodies that we will offer to license our essential patents for these standards consistent with our commitments to those bodies. We have made similar commitments with respect to certain other technologies implemented in industry standards.

QTL licensing revenues include royalties and, to a lesser extent, license fees. Licensees pay quarterly royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, such as smartphones, tablets, laptops and smartwatches, and which provide for a maximum royalty amount payable per device. For certain non-handset product categories, including automotive, we charge a fixed royalty amount per unit. Revenues generated from royalties are subject to quarterly and annual fluctuations.

The vast majority of QTL revenues have been generated through our licensees' sales of CDMA-based (including, but not limited to WCDMA-based) and OFDMA-based products (including 3G, 3G/4G and 3G/4G/5G multimode devices), such as smartphones and other devices. We have invested in both the acquisition and development of, and continue to invest in the development of, OFDMA technology and intellectual property and have generated the industry leading patent portfolio applicable to LTE, LTE Advanced, LTE Advanced Pro and 5G NR. Some of our inventions that serve as foundational technologies for 3G and 4G also serve as foundational technologies for 5G. We have invested and continue to invest in the development of 5G and continue to play a significant role in driving advancements of 5G. Nevertheless, we face competition in the development of intellectual property for future generations of digital wireless communications technologies and services.

Separate and apart from licensing manufacturers of wireless devices and network equipment, we have entered into certain arrangements with competitors of our QCT segment. A principal purpose of these arrangements is to provide our QCT segment and the counterparties certain freedom of operation with respect to each party's integrated circuits business. In every case, these agreements expressly reserve the right for QTL to seek royalties from the customers of such integrated circuit suppliers with respect to such suppliers' customers' sales of CDMA-based (including, but not limited to WCDMA-based) and OFDMA-based wireless devices into which such suppliers' integrated circuits are incorporated.

Our license agreements also may provide us with rights to use certain of our licensees' technology and intellectual property to manufacture, sell and/or use certain components (e.g., application-specific integrated circuits) and related software, cellular devices and/or infrastructure equipment.

We have been in the past, currently are, and may in the future be subject to certain legal proceedings and/or governmental investigations challenging our patent licensing practices, including those described in this Annual Report under the heading "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies," which may require us to change our patent licensing practices as described herein in "Part I, Item 1A. Risk Factors" under the heading "*Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations.*"

QSI Segment. QSI makes strategic investments primarily through our Qualcomm Ventures arm that are focused on expanding or opening new opportunities for our technologies as well as supporting the design and introduction of new products and services (or enhancing existing products or services). Many of these strategic investments are in early-stage companies in a variety of industries and applications, including, but not limited to, 5G, AI, automotive, consumer, enterprise, cloud, IoT and XR. Investments primarily include non-marketable equity securities and, to a lesser extent, marketable equity securities and convertible debt instruments. In addition, QSI segment results include revenues and related costs associated with certain development contracts with one of our investees. As part of our strategic investment activities, we generally intend to pursue various exit strategies for each of our QSI investments in the foreseeable future.

Other Businesses. Nonreportable segments include our QGOV business, our cloud AI inference processing initiative and other technology and service initiatives. QGOV provides development and other services and sells related products to U.S. government agencies and their contractors.

Seasonality. Information regarding seasonality is provided in this Annual Report in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in the "Our Business and Operating Segments" section under the heading "Seasonality."

Corporate Structure

We operate our businesses through our parent company, QUALCOMM Incorporated, and multiple direct and indirect subsidiaries. We have developed our corporate structure in order to address various legal, regulatory, tax, contractual compliance, operational and other matters. Substantially all of our products and services businesses, including QCT, and substantially all of our engineering and research and development functions, are operated by Qualcomm Technologies, Inc. (QTI), a subsidiary of QUALCOMM Incorporated, and QTI's subsidiaries. QTL is operated by QUALCOMM Incorporated, which owns the vast majority of our patent portfolio. Neither QTI nor any of its subsidiaries has any right, power or authority to grant any licenses or other rights under or to any patents owned by QUALCOMM Incorporated.

Revenue Concentrations and Significant Customers

A small number of customers/licensees historically have accounted for a significant portion of our consolidated revenues. In fiscal 2022, revenues from Apple and Samsung each comprised 10% or more of our consolidated revenues. Additional information regarding revenue concentrations is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies" and "Notes to Consolidated Financial Statements, Note 8. Segment Information."

Research and Development

The wireless communications industry is characterized by rapid technological change, evolving industry standards, frequent new product introductions and, with the use of 5G, the expansion into industries and applications beyond mobile handsets such as automotive and IoT, requiring a continuous effort to enhance existing products and technologies and to develop new products and technologies. We have significant engineering resources, including engineers with substantial expertise in modem, radio-frequency integrated circuit, RFFE, multimedia (camera, video, display and computer vision), sensor perception and drive policy, advanced SoC, which includes specialized engines such as CPU and GPU to enable high performance and low-power computing and other optimization techniques, AI, packaging and a broad range of other technologies. We expect to continue to invest in research and development in a variety of ways in an effort to extend the demand for our products and technologies and to utilize that research and development in industries and applications beyond mobile handsets (such as automotive and IoT), including continuing the development of new modem and multimedia technologies and other technologies (such as ADAS/AD and XR), developing alternative technologies for certain specialized applications, participating in the formulation of new voice and data communication standards and technologies and assisting in deploying digital voice and data communications networks around the world.

We continue to invest significant resources towards advancements in OFDMA-based technologies and products (including LTE and 5G). We also engage in acquisitions and other transactions to meet certain technology needs, to obtain development resources or open or expand opportunities for our technologies and to support the design and introduction of new products and services (or enhance existing products and services) for voice and data communications and industries and applications beyond mobile handsets, such as ADAS/AD. We make investments to provide our integrated circuit customers with chipsets designed on leading-edge technology nodes that combine multiple technologies for use in consumer electronic devices (e.g., smartphones, tablets, laptops, voice and music devices, wearable devices and XR devices) and other products (e.g., access points and routers, data cards and infrastructure equipment). In addition to 3G, 4G and 5G technologies, our chipsets support other wireless and wired connectivity technologies, including Wi-Fi, Bluetooth, Ethernet, location positioning and Powerline communication. Our integrated chipsets often include multiple technologies, including advanced multimode modems, application processors and graphics engines, as well as the tools to connect these diverse technologies. We continue to support Android, Windows and other client software environments in our chipsets.

We develop innovations that are integrated into our product portfolio to further expand the opportunity for wireless communications and enhance the value of our products and services. These innovations are expected to enable our customers to improve the performance or value of their existing services, offer these services more affordably and introduce revenue-generating broadband data services ahead of their competition.

We have research and development centers in various locations throughout the world that support our global development activities and ongoing efforts to develop and/or advance 4G, 5G, RFFE and a broad range of other technologies. We continue to use our substantial engineering resources and expertise to develop new technologies, applications and services and make them available to licensees to help grow the communications industry and generate new or expanded licensing opportunities.

Environmental, Social and Governance (ESG) and Human Capital

We believe that our innovations have helped transform industries, enhance people's lives and address some of society's biggest challenges. With the world becoming increasingly connected, we have an opportunity to shape a better future. We believe in the power of technology. As such, our corporate responsibility vision is to be a facilitator of innovation for a sustainable world, connected wirelessly.

We have integrated corporate responsibility throughout our business, from our daily operations to our executive leadership and our Board of Directors (Board). The Governance Committee of our Board provides oversight on corporate responsibility matters, including ESG policies, programs and initiatives, and the HR and Compensation Committee of our Board provides oversight on our workforce diversity, equity and inclusion programs and initiatives. Our ESG Leadership Committee, composed of executives and senior management, provides guidance on global corporate responsibility issues. Our ESG Governance Committee implements directives from the ESG Leadership Committee, measures progress on achieving our goals and reports to management on accomplishments and challenges.

ESG

We believe that our sustained investment in research and development has helped revolutionize the way people connect. We center our ESG efforts around purposeful innovation, focusing on three strategic focus areas where we believe we can have the biggest impact:

- ***Empowering Digital Transformation.*** We believe technology can transform industries, businesses, communities and individual lives. We invent solutions that are foundational to the advancement of the global wireless ecosystem, improving how we work, live and, ultimately, thrive.
- ***Acting Responsibly.*** We invest in our people, behave with integrity and implement governance standards that uphold Qualcomm's values. We are committed to responsible business practices, from prioritizing diversity, equity and inclusion, to protecting privacy, to providing leading development programs and to creating an ethical culture.
- ***Operating Sustainably.*** We are committed to maintaining safe, healthy and productive working conditions and conserving natural resources. Our environmental efforts center on reducing greenhouse gas (GHG) emissions, optimizing energy consumption, managing water usage and minimizing waste throughout our operations and the communities in which we work.

2025 Goals. In addition to the human capital goals discussed below, our *2025 Goals* related to corporate responsibility include, among others:

- Reducing our absolute Scope 1 and Scope 2 GHG emissions by 30% from global operations, compared to a 2014 baseline.
- Reducing power consumption by 10% every year in our flagship Snapdragon Mobile Platform products (given equivalent features).
- Ensuring 100% of our primary semiconductor manufacturing suppliers are audited every 2-years for conformance to our Supplier Code of Conduct.

Net-Zero Global GHG Emissions Commitment. In addition to our *2025 Goals*, in November 2021, we announced plans to: (1) reduce absolute Scope 1 and 2 GHG emissions by 50% by 2030 from a 2020 base year; (2) reduce absolute Scope 3 GHG emissions by 25% by 2030 from a 2020 base year; and (3) reach net-zero global GHG emissions for Scopes 1, 2 and 3 by 2040.

The foregoing discussion includes information regarding ESG matters that we believe may be of interest to our stockholders generally. We recognize that certain other stakeholders (such as customers, employees and non-governmental organizations), as well as certain of our stockholders, may be interested in more detailed information on these topics. We encourage you to review our most recent Qualcomm Corporate Responsibility Report (located on our website) for more detailed information regarding our Corporate Responsibility and ESG governance, goals, priorities, accomplishments and initiatives; a 5G and sustainability report, *Environmental Sustainability and a Greener Economy: The Transformative Role of 5G* (also located on our website) for additional information regarding our views on climate change, environmental sustainability and the role of 5G in enabling a more sustainable future; as well as the Corporate Governance section of our most recent Proxy Statement, and our Corporate Governance Principles and Practices (located on our website), for additional information regarding governance matters, including Board and Committee leadership, oversight, roles and responsibilities, and Director independence, tenure, refreshment and diversity. Nothing on our website, including the aforementioned reports, documents or sections thereof, shall be deemed incorporated by reference into this Annual Report.

Human Capital

In order to continue to produce the innovative, breakthrough technologies for which we are known, it is crucial that we continue to attract and retain top talent. To facilitate talent attraction and retention, we strive to make Qualcomm a diverse, inclusive and safe workplace, with opportunities for our employees to grow and develop in their careers, supported by strong compensation, benefits and health and wellness programs and by programs that build connections between our employees and their communities.

At September 25, 2022, we had approximately 51,000 full-time, part-time and temporary employees, the overwhelming majority of which were full-time employees. During fiscal 2022, the number of employees increased by approximately 6,000, primarily due to increases in engineering resources, including those hired through acquisitions. Our employees are represented by more than 100 (self-identified) nationalities working in over 150 locations in 37 different countries around the world. Collectively, we speak more than 90 different languages. Our global workforce is highly educated, with the substantial majority of our employees working in engineering or technical roles (many of whom help develop foundational technologies for both our QCT semiconductor business and our QTL licensing business). During fiscal 2022, our voluntary turnover rate was less than 10%, lower than the technology industry benchmark, which is comprised of certain of our key competitors (Aon, 2022 Salary Increase and Turnover Study - Second Edition, September 2022).

Diversity, Equity and Inclusion. We believe that a diverse workforce is important to our success, and we continue to focus on the hiring, retention and advancement of women and underrepresented populations. Our recent efforts have been focused in three areas: inspiring innovation through an inclusive and diverse culture; expanding our efforts to recruit and hire world-class diverse talent; and identifying strategic partners to accelerate our inclusion, equity and diversity programs.

We have employee networks that enhance our inclusive and diverse culture, including global network groups focused on supporting women, LGBTQ+ employees and employees with disabilities, in addition to U.S.-based employee networks that focus on Black and African American employees, Hispanic and Latinx employees and U.S. military members and veterans.

We continue to recruit technical talent in diverse communities, including by engaging as a high-level sponsor of professional conferences, such as the Grace Hopper Celebration, the Society of Hispanic Professional Engineers National Convention and the National Society of Black Engineers National Convention. We also continue to recruit from a variety of colleges including Hispanic-Serving Institutions, Historically Black Colleges and Universities and Women's Colleges.

Our continued engagement with organizations that work with diverse communities has been vital to our efforts to increase women and minority representation in our workforce. For example, we partner with AnitaB.org to benchmark our progress and to identify promising practices for recruiting, retaining and advancing women technologists, and we support its research initiatives related to attracting and retaining women and underrepresented minority students in computing majors. We, alongside other top technology companies, helped form the Reboot Representation Tech Coalition, which aims to double the number of Black, Latinx and Native American women receiving computing degrees by 2025. Through our collaboration with Disability:IN's Inclusion Works program, we have increased our ability to address the needs of individuals with disabilities.

We publish our most recent Consolidated EEO-1 reports on our website to provide additional transparency into our efforts to increase underrepresented populations in our workforce. We have also publicly set 2025 goals around diverse workforce and leadership representation, as described below.

From a governance perspective, the HR and Compensation Committee of our Board provides oversight of our policies, programs and initiatives focusing on workforce diversity, equity and inclusion.

Health, Safety and Wellness. The success of our business is fundamentally connected to the well-being of our people. Accordingly, we are committed to the health, safety and wellness of our employees. We provide our employees and their families with access to a variety of innovative, flexible and convenient health and wellness programs, including benefits that provide protection and security concerning events that may require time away from work or that impact their financial well-being; that support their physical and mental health by providing tools and resources to help them improve or maintain their health status and encourage engagement in healthy behaviors; and that offer choice where possible so they can customize their benefits to meet their needs and the needs of their families.

During the COVID-19 pandemic, we took a variety of measures that we determined were in the best interests of our employees, as well as the communities in which we operate, and we have recently implemented a "hybrid" work model, meaning that the majority of our employees have flexibility to work remotely at least some of the time. The hybrid work model is intended to provide increased flexibility and support employee health and safety, while maintaining our strong culture of innovation, collaboration, openness and camaraderie. We continue to monitor the state of the pandemic and gather additional feedback to facilitate the continued health, safety and wellness of our employees working onsite. We also introduced our Live+Well, Work+Well program, designed to help cultivate a productive work environment, while also focusing on our employees' well-being.

Compensation and Benefits. We provide robust compensation and benefits programs to help meet the needs of our employees. In addition to salaries, these programs (which vary by country/region) include annual bonuses, stock awards, an employee stock purchase plan, a 401(k) plan, healthcare and insurance benefits, health savings and flexible spending accounts, paid time off, family leave, family care resources, flexible work schedules, adoption and surrogacy assistance, employee assistance programs, tuition assistance, and on-site services such as health centers and fitness centers, among others. In addition to our broad-based equity award programs, we have used targeted equity awards with vesting conditions to facilitate retention of personnel, particularly those with critical engineering skills and experience.

Talent Development. We invest significant resources to develop the talent needed to remain a world-leading wireless innovator. We deliver numerous training opportunities, provide rotational assignment opportunities, focus on continuous learning and development and have implemented what we believe are industry-leading methodologies to manage performance, provide feedback and develop talent.

Our talent development programs are designed to provide employees with the resources they need to help achieve their career goals, build management skills and lead their organizations. We provide a series of employee workshops around the globe that support professional growth and development. Additionally, our manager and employee forum programs provide an ongoing opportunity for employees to practice and apply learning around conversations aligned with our annual review process. We also have an employee development website that provides quick access to learning resources that are personalized to the individual's development needs.

Building Connections - With Each Other and our Communities. We believe that building connections between our employees, their families and our communities creates a more meaningful, fulfilling and enjoyable workplace. Through our engagement programs, our employees can pursue their interests and hobbies, connect to volunteering and giving opportunities and enjoy unique recreational experiences with family members. Leveraging our partnerships with various local arts and culture organizations, we have created numerous unique experiences for employees and their families around the world.

Since our employees are passionate about many causes, our corporate giving and volunteering programs support and encourage employees by engaging with those causes. In our offices around the world, our employee-led Giving Committees select local organizations to support, often in the form of grants that are primarily funded by the Qualcomm Foundation (which was established in 2011 to support charitable giving and volunteerism). We also frequently collaborate with these organizations on volunteer activities for our employees. Additionally, during fiscal 2022, thousands of our employees around the world utilized our charitable match program, benefiting more than 1,500 charitable organizations.

2025 Goals. We set the following *2025 Goals* related to human capital, with a focus on diversity, equity and inclusion:

- Increase women in leadership by 15% (defined as individuals at the principal and above level in technical roles, and director and above in non-technical roles).
- Increase underrepresented minorities (URM) in leadership by 15% (for technical positions, "URM" includes Black, Hispanic or Latinx, Native Hawaiian or other Pacific Islander, and American Indian or Native American; for non-technical positions, URM also includes Asian).
- Increase overall URM representation by 20%.

Human Capital Advancements Linked to our Executive Compensation. The HR and Compensation Committee of our Board will consider human capital advancements in determining our executives' fiscal 2022 bonus. For fiscal 2022, progress towards human capital advancements serves as a non-financial performance modifier that can adjust the executives' bonus payout by a multiple of 0.9 to 1.1.

The foregoing discussion includes information regarding Human Capital matters that we believe may be of interest to stockholders generally. We recognize that certain other stakeholders (such as customers, employees and non-governmental organizations), as well as certain of our stockholders, may be interested in more detailed information on these topics. We encourage you to review the "Our People" section of our most recent Qualcomm Corporate Responsibility Report (located on our website) for more detailed information regarding our Human Capital goals, programs and initiatives. Nothing on our website, including our Consolidated EEO-1 reports, our Qualcomm Corporate Responsibility Report or sections thereof, shall be deemed incorporated by reference into this Annual Report.

Available Information

Our Internet address is www.qualcomm.com. There we make available, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and any amendments to those reports (among others), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). We also make available on our website public financial information for which a report is not required to be filed with or furnished to the SEC. Our SEC reports and such other information can be accessed through the investor relations section of our website (https://

investor.qualcomm.com/). The information found on our website is not part of this or any other report we file with or furnish to the SEC.

Information about our Executive Officers

Information about our executive officers (and their ages as of November 1, 2022) are as follows:

Cristiano R. Amon, age 52, has served as President and Chief Executive Officer and as a member of the Board of Directors since June 2021. Mr. Amon served as President and Chief Executive Officer-elect from January 2021 to June 2021 and President from January 2018 to January 2021. He served as Executive Vice President, Qualcomm Technologies, Inc.

(QTI), a subsidiary of Qualcomm Incorporated, and President, QCT, from November 2015 to January 2018. He served as Executive Vice President, QTI and Co-President, QCT from October 2012 to November 2015, Senior Vice President and Co-President, QCT from June 2012 to October 2012 and as Senior Vice President, QCT Product Management from October 2007 to June 2012, with responsibility for our product roadmap, including the Snapdragon platforms. Mr. Amon joined Qualcomm in 1995 as an engineer and throughout his tenure at Qualcomm has held several other technical and leadership positions. Mr. Amon holds a B.S. in Electrical Engineering and an honorary doctorate from UNICAMP, the State University of Campinas, Brazil.

Heather Ace, age 52, has served as Chief Human Resources Officer since March 2020. Prior to joining Qualcomm, Ms. Ace was Senior Vice President, Human Resources at DexCom, Inc., a provider of continuous glucose monitoring, from July 2016 to March 2020. Prior to DexCom, she was Executive Vice President, Human Resources at Orexigen Therapeutics, Inc., a developer of treatments for obesity, from January 2016 to July 2016. Ms. Ace was Integration Leader for Royal Philips, leading the cross-functional integration of Philips Healthcare's acquisition of Volcano Corporation, from January 2015 to January 2016. She was Executive Vice President, Human Resources at Volcano Corporation from May 2012 to January 2015. Prior to May 2012, Ms. Ace served in various senior executive roles in human resources, post-acquisition/merger integration and employment law at Life Technologies Corporation. She began her career at Gray, Cary, Ware & Freidenrich (now DLA Piper) as a litigation and transactional employment attorney, specializing in mergers and acquisitions. Ms. Ace holds a B.A. in Law & Society from the University of California, Santa Barbara and a J.D. from Santa Clara School of Law.

James J. Cathey, age 58, has served as Chief Commercial Officer, QTI since April 2022. Mr. Cathey served as Senior Vice President, Global Business Operations, QTI from December 2018 to April 2022, Senior Vice President, QTI and President, APAC and India from May 2016 to December 2018, Vice President, QTI and President, APAC and India from December 2015 to May 2016 and Vice President, QTI and President, Qualcomm Japan from December 2014 to December 2015. He served in various other operational and leadership roles since joining Qualcomm in September 2006. Prior to joining Qualcomm, he was an executive at Micron Technology, Inc., MicroDisplay Corp. and PixTech Inc. Mr. Cathey holds a B.B.A. from Boise State University.

Ann Chaplin, age 49, has served as General Counsel and Corporate Secretary since November 2021. Prior to joining Qualcomm, Ms. Chaplin served at General Motors Company as Corporate Secretary and Deputy General Counsel, U.S., Transformation Initiatives and Corporate Securities from February 2021 to November 2021, Deputy General Counsel and Chief Compliance Officer, North America, Transformation Projects and Compliance from April 2019 to February 2021, Deputy General Counsel, Commercial, Transportation as a Service, Litigation and Regulation from January 2018 to April 2019, Deputy General Counsel, Intellectual Property, Regulation and Litigation from June 2017 to January 2018 and Deputy General Counsel, Litigation from December 2015 to June 2017. Prior to General Motors, Ms. Chaplin was an attorney at Fish & Richardson P.C. from February 2001 to December 2015, last holding the position of Litigation Practice Group Leader/Litigation Equity Principal. She began her career as an intellectual property litigation associate at the law firm of Robins, Kaplan, Miller & Ciresi LLP. Ms. Chaplin holds a B.A in Sociology of Law from the University of Minnesota and a J.D. from Harvard Law School.

Akash Palkhiwala, age 47, has served as Chief Financial Officer since November 2019. Mr. Palkhiwala served as Senior Vice President and Interim Chief Financial Officer from August 2019 to November 2019. He served as Senior Vice President, QCT Finance, QTI from December 2015 to August 2019 and Senior Vice President and Treasurer from October 2014 to December 2015. Mr. Palkhiwala served in various other finance and leadership roles since joining Qualcomm in March 2001. Prior to joining Qualcomm, he was an Analyst at KeyBank. Mr. Palkhiwala holds an undergraduate degree in Mechanical Engineering from L.D. College of Engineering in India and an M.B.A from the University of Maryland.

Alexander H. Rogers, age 65, has served as President, QTL and Global Affairs since June 2021. Mr. Rogers served as President, QTL from October 2016 to June 2021, Senior Vice President and President, QTL from September 2016 to October 2016, Senior Vice President, Deputy General Counsel and General Manager, QTL from March 2016 to September 2016, Senior Vice President and Deputy General Counsel from October 2015 to March 2016 and Senior Vice President and Legal Counsel from April 2007 to October 2015. Prior to QTL, he led Qualcomm's litigation group. Mr. Rogers joined Qualcomm in January 2001 as an attorney. Prior to joining Qualcomm, he was a partner at the law firm of Gray, Cary, Ware & Freidenrich (now DLA Piper), specializing in intellectual property and commercial litigation. Mr. Rogers holds a B.A. and an M.A. in English Literature from Georgetown University and a J.D. from Georgetown University Law Center.

James H. Thompson, age 58, has served as Chief Technology Officer, QTI since March 2017. Dr. Thompson served as Executive Vice President, Engineering, QTI from October 2012 to March 2017 and Senior Vice President, Engineering from July 1998 to October 2012. He joined Qualcomm in 1992 as a senior engineer and throughout his tenure at Qualcomm has held several other technical and leadership positions. Dr. Thompson holds a B.S., an M.S. and a Ph.D. in Electrical Engineering from the University of Wisconsin.

Item 1A. Risk Factors

You should consider each of the following factors in evaluating our business and our prospects, any of which could negatively impact our business, results of operations, cash flows and financial condition, and require significant management time and attention. Further, the risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also negatively impact our business, results of operations, cash flows and financial condition, and require significant management time and attention. In such cases, the trading price of our common stock could decline. You should also consider the other information set forth in this Annual Report in evaluating our business and our prospects, including but not limited to our financial statements and the related notes, and "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations." References to "and," "or" and "and/or" should be read to include the others, as appropriate.

RISKS RELATED TO OUR OPERATING BUSINESSES

We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected.

We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices, and we expect this trend to continue in the foreseeable future. Our industry is experiencing and may continue to experience concentration of device share among a few companies, particularly at the premium tier, contributing to this trend. Certain Chinese OEMs continue to grow their device share in China and are increasing their device share in regions outside of China, and we derive a significant portion of our revenues from a small number of these OEMs as well. See also "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies - Concentrations."

In addition, a number of our largest integrated circuit customers have developed, are developing or may develop their own integrated circuit products, or may choose our competitors' integrated circuit products, which they have in the past utilized, currently utilize and may in the future utilize in some or all of their devices, rather than our products, which could significantly reduce the revenues we derive from these customers. See also the Risk Factor titled "*Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products)*."

Further, political actions, including trade and/or national security protection policies, or other actions by governments, particularly the U.S. and Chinese governments, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our customers, limit, prevent or discourage those customers from transacting business with us, or make it more expensive to do so, any of which could also significantly reduce the revenues we derive from these customers. See also the Risk Factor titled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions*."

In addition, we spend a significant amount of engineering and development time, funds and resources in understanding our key customers' feedback and/or specifications and attempt to incorporate such input into our product launches and technologies. These efforts may not require or result in purchase commitments from such customers or we may have lower purchases from such customers than expected, and consequently, we may not achieve the anticipated revenues from these efforts, or these efforts may result in non-recoverable costs.

The loss of any one of our significant customers, a reduction in the purchases of our products by any of these customers or the cancellation of significant purchases by any of these customers, whether due to the use of their own integrated circuit products or our competitors' integrated circuit products, government restrictions, a decline in global, regional or local economic conditions, a decline in consumer demand, elevated inventory levels at our customers or otherwise, would reduce our revenues and could harm our ability to achieve or sustain expected results of operations. A delay of significant purchases, even if only temporary, would reduce our revenues in the period of the delay. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development.

Further, the concentration of device share among a few companies, and the corresponding purchasing power of these companies, may result in lower prices for our products which, if not accompanied by a sufficient increase in the volume of purchases of our products, could have an adverse effect on our revenues and margins. In addition, the timing and size of purchases by our significant customers may be impacted by the timing of such customers' new or next generation product introductions, over which we have no control, and the timing and success of such introductions may cause our revenues and results of operations to fluctuate.

Apple purchases our MDM (or thin modem) products, which do not include our integrated application processor technology, and which have lower revenue and margin contributions than our combined modem and application processor products. Consequently, to the extent Apple takes device share from our customers who purchase our integrated modem and application processor products, our revenues and margins may be negatively impacted.

Our industry has also experienced slowing growth in the premium-tier device segment due to, among other factors, a maturing premium-tier smartphone industry in which demand is increasingly driven by new product launches and innovation cycles. A reduction in sales of premium-tier devices, a reduction in sales of our premium-tier integrated circuit products (which have a higher revenue and margin contribution than our lower-tier integrated circuit products), or a shift in share away from OEMs that utilize our premium-tier products, would reduce our revenues and margins and may harm our ability to achieve or sustain expected financial results. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development.

Further, while our product and revenue diversification strategies have resulted in an increasing portion of our revenues coming from outside of mobile handsets, e.g., from industries such as automotive and IoT, certain product categories within those industries may in themselves be subject to high levels of customer concentration.

Although we have more than 300 licensees, we derive a significant portion of our licensing revenues from a limited number of licensees, which includes a number of Chinese OEMs. In the event that one or more of our significant licensees fail to meet their reporting and payment obligations, or we are unable to renew or modify one or more of their license agreements under similar terms as their existing agreements, our revenues, results of operations and cash flows would be adversely impacted. Moreover, the future growth and success of our core licensing business will depend in part on the ability of our licensees to develop, introduce and deliver high-volume products that achieve and sustain customer acceptance. We do not have control over the product development, sales efforts or pricing of products by our licensees, and our licensees might not be successful. Reductions in sales of our licensees' products, or reductions in the average selling prices of wireless devices sold by our licensees without a sufficient increase in the volumes of such devices sold, would generally have an adverse effect on our licensing revenues.

Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products).

Certain of our largest integrated circuit customers (for example, Samsung) develop their own integrated circuit products, which they have in the past utilized, and currently utilize, in certain of their devices and may in the future utilize in some or all of their devices, rather than our products (and they have and may continue to sell their integrated circuit products to third parties, discretely or together with certain of their other products, in competition with us).

Apple has utilized modem products of one of our competitors in some of its devices rather than our products, and solely utilized one of our competitors' products in several of its prior device launches. In December 2019, Apple acquired Intel's modem assets and is developing its own modem products using those assets. Accordingly, we expect Apple to use its own modem products, rather than our products, in some or all of its future devices.

Similarly, we derive a significant portion of our revenues from Chinese OEMs. Certain of our customers in China have developed, and others may in the future develop, their own integrated circuit products and use such integrated circuit products in their devices rather than our integrated circuit products, including due to pressure from or policies of the Chinese government (whose *Made in China 2025* campaign targets 70% semiconductor self-sufficiency by 2025), concerns over losing access to our integrated circuit products as a result of actual, threatened or potential U.S. or Chinese government actions or policies, including trade protection or national security policies, or other reasons. See also the Risk Factor titled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.*"

In addition, periodic supply/capacity constraints within the semiconductor industry may further incentivize our integrated circuit customers to vertically integrate in an effort to secure additional control over their supply chains.

If some or all of our largest customers and/or the largest smartphone OEMs utilize their own integrated circuit/modem products in some or all of their devices rather than our products, our business, revenues, results of operations, cash flows and financial position could be materially adversely impacted. See also the Risk Factor titled "*We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected*."

A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.

We derive a significant portion of our revenues from Chinese OEMs, and from non-Chinese OEMs that utilize our integrated circuit products in their devices and sell those devices into China, which has the largest number of smartphone users in the world. We also source certain critical integrated circuit products from suppliers in China.

Due to various factors, including pressure, encouragement or incentives from, or policies of, the Chinese government (including its *Made in China 2025* campaign), concerns over losing access to our integrated circuit products as a result of actual, threatened or potential U.S. or Chinese government actions or policies, including trade protection or national security policies, or other reasons, some of our Chinese integrated circuit customers have developed, and others may in the future develop, their own integrated circuit products and use such integrated circuit products in their devices, or use our competitors' integrated circuit products in their devices, rather than our products, which could materially harm our business, revenues, results of operations, cash flows and financial position. See also the Risk Factor titled "*Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products).*"

Political actions, including trade protection and national security policies of the U.S. and Chinese governments, such as tariffs, bans or placing companies on restricted entity lists, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our Chinese customers or suppliers, limit, prevent or discourage certain of our Chinese customers or suppliers from transacting business with us, or make it more expensive to do so. Given our revenue concentration in China, if, due to actual, threatened or potential U.S. or Chinese government actions or policies: we were further limited in, or prohibited from, selling our integrated circuit products to Chinese OEMs; our non-Chinese OEM customers were limited in, or prohibited from, selling devices into China that incorporate our integrated circuit products; Chinese OEMs develop and use their own integrated circuit products or use our competitors' integrated circuit products in some or all of their devices rather than our integrated circuit products; Chinese tariffs on our integrated circuit products or on devices which incorporate our integrated circuit products made purchasing such products or devices more expensive to Chinese OEMs or Chinese consumers; or our Chinese licensees delay or cease making payments of license fees they owe us, our business, revenues, results of operations, cash flows and financial position could be materially harmed. Similarly, if, due to U.S. or Chinese government actions or policies, we were limited in or prohibited from obtaining critical integrated circuit products from our suppliers in China, our business, revenues, results of operations, cash flows and financial position could be materially harmed. See also the Risk Factor titled "*We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected*."

Finally, government policies in China that regulate the amount and timing of funds that may flow out of the country have impacted and may continue to impact the timing of our receipt of, and/or ability to receive, payments from our customers and licensees in China, which may negatively impact our cash flows.

RISKS RELATED TO NEW INITIATIVES

Our growth depends in part on our ability to extend our technologies and products into new and expanded product areas, and industries and applications beyond mobile handsets. Our research, development and other investments in these new and expanded product areas, industries and applications, and related technologies and products, as well as in our existing technologies and products, and new technologies, may not generate operating income or contribute to future results of operations that meet our expectations.

While we continue to invest significant resources toward advancements primarily in support 5G-based technologies, we also invest in new and expanded product areas, and industries and applications beyond mobile handsets, by utilizing our existing technical and business expertise and through acquisitions or other strategic transactions.

In particular, our future growth depends in part on new and expanded product areas, and industries and applications beyond mobile handsets, such as automotive and IoT; our ability to develop leading and cost-effective technologies and products for these new and expanded product areas, industries and applications; and third parties incorporating our technologies and products into devices used in these product areas, industries and applications. Accordingly, we intend to continue to make substantial investments in these new and expanded product areas, industries and applications, and in developing new products and technologies for these product areas, industries and applications. Our growth also depends significantly on our ability to develop and patent 5G technologies, and to develop and commercialize products using 5G technologies.

However, our research, development and other investments in these new and expanded product areas, industries and applications, and corresponding technologies and products, as well as in our existing technologies and products and new technologies in mobile handsets, may not succeed because, among other reasons: we may not be issued patents on the technologies we develop; the technologies we develop may not be incorporated into relevant standards; new and expanded product areas, industries and applications beyond mobile handsets, and consumer demand therein, may not develop or grow as anticipated; we may be unable to attract or retain employees with the necessary skills in such new and expanded product areas, industries and applications; our strategies or the strategies of our customers, licensees or partners may not be successful; alternate technologies or products may be better or may reduce the advantages we anticipate from our investments; competitors' technologies or products may be more cost effective, have more capabilities or fewer limitations or be brought to market faster than our new technologies or products; we may not be able to develop, or our competitors may have more established and/or stronger, customer, vendor, distributor or other channel relationships; and competitors may have longer operating histories in industries and applications that are new to us. We may also underestimate the costs of, or overestimate the future revenues or margins that could result from these investments, and these investments may not, or may take many years to, generate material returns.

Further, the automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in significant barriers to entry and increased costs.

If our products fail to perform to specifications, compete with the product quality of our competitors or meet quality and/or regulatory standards of a particular industry or application (including product safety and information security standards, which may differ by region, geography and industry, and which are particularly stringent in the automotive industry), we may be unable to successfully expand our business in that industry or application, and our growth could be limited.

In addition, in order to successfully extend our technologies and products into new and expanded product areas, and industries and applications beyond mobile handsets, we may need to transition to new business models and transform aspects of our organization, and we may not be successful in doing so.

If we are not successful in extending our technologies and products into new and expanded product areas, and industries and applications beyond mobile handsets, if our new technologies and products are not successful, or if we are not successful in the time frames we anticipate, we may incur significant costs and asset impairments, our business and revenues may not grow or grow as anticipated, our revenues and margins may be negatively impacted, our stock price may decline and our reputation may be harmed.

We may engage in acquisitions and other strategic transactions or make investments, or be unable to consummate planned strategic acquisitions, which could adversely affect our results of operations or fail to enhance stockholder value.

We engage in acquisitions and other strategic transactions, including joint ventures, and make investments, which we believe are important to the future of our business, with the goal of maximizing stockholder value. We routinely acquire businesses and other assets, including patents, technology and other intangible assets, enter into joint ventures or other strategic transactions, and purchase minority equity interests in or make loans to companies, including those that may be private and early-stage. Our strategic activities are generally focused on opening or expanding opportunities for our products and technologies and supporting the design and introduction of new products (or enhancing existing products) for mobile handsets, and for industries and applications beyond mobile handsets. Many of our strategic activities entail a high degree of risk and require the use of significant amounts of capital, and investments may not become liquid for several years after the date of the investment, if at all. Our strategic activities may not be successful, generate financial returns or result in increased adoption or continued use of our technologies or products. We may underestimate the costs or overestimate the benefits, including product, revenue, cost and other synergies and growth opportunities that we expect to realize, and we may not achieve those benefits. In some cases, we may be required to consolidate or record our share of the earnings or losses of companies in which we have acquired ownership or variable interests. In addition, we have in the past recorded, and may in the future record, impairment or other charges related to our strategic activities. Any losses or impairment charges that we incur related to strategic activities will have a negative impact on our results of operations and financial condition, and we may continue to incur new or additional losses related to strategic assets or investments that we have not fully impaired or exited.

Achieving the anticipated benefits of business acquisitions depends in part upon our ability to integrate the businesses in an efficient and effective manner and achieve anticipated synergies, and we may not be successful in these efforts. Such integration is complex and time consuming and involves significant challenges, including, among others: retaining key employees; successfully integrating new employees, facilities, technology, products, processes, operations (including supply and manufacturing operations), sales and distribution channels, business models and business systems; retaining customers and suppliers of the businesses; consolidating research and development operations; minimizing the diversion of management’s attention from ongoing business matters; consolidating corporate and administrative infrastructures; and managing the increased scale, complexity and globalization of our business, operations and employee base. We may not derive any commercial value from associated technologies or products or from future technologies or products based on these technologies, and we may be subject to liabilities that are not covered by indemnification protection that we may obtain, and we may become subject to litigation. Additionally, we may not be successful in entering or expanding into new sales or distribution channels, business or operational models, geographic regions, industries and applications served by or adjacent to the associated businesses or in addressing potential new opportunities that may arise out of our strategic acquisitions.

If we do not achieve the anticipated benefits of business acquisitions or other strategic activities, our business and results of operations may be adversely affected, and we may not enhance stockholder value by engaging in these transactions.

Many of our acquisitions and other strategic investments require approval by the United States and/or foreign government agencies. Certain agencies in the past have, and may in the future, deny the transaction or fail to approve in a timely manner, resulting in us not realizing the anticipated benefits of the proposed transaction. Future acquisitions or other strategic investments may be more difficult, complex or expensive to the extent that our reputation for our ability to consummate acquisitions has been or is in the future harmed. Further, if U.S./China relations remain strained, our ability to consummate any transaction that would require approval from the relevant regulatory agency(ies) in China may be severely impacted. In addition, acquisitions that we have completed could subsequently be reviewed and/or challenged by government agencies, which could result in fines, penalties or other liability, or requirements to divest all or a portion of an acquired business.

RISKS RELATED TO SUPPLY AND MANUFACTURING

We depend on a limited number of third-party suppliers for the procurement, manufacture, assembly and testing of our products manufactured in a fabless production model. If we fail to execute supply strategies that provide supply assurance, technology leadership and reasonable margins, our business and results of operations may be

harmed. We are also subject to order and shipment uncertainties that could negatively impact our results of operations.

We primarily utilize a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Other than the facilities we own that manufacture certain of our RFFE modules and RF (radio frequency) filter products, we rely on third-party suppliers to perform the manufacturing and assembly, and most of the testing, of our integrated circuits. Our suppliers are also responsible for the procurement of most of the raw materials used in the production of our integrated circuits. There are a limited number of such third-party suppliers, and even fewer who are capable of manufacturing at the leading process technology nodes or who are willing to operate at older process technology nodes necessary for certain of our integrated circuit products. The semiconductor manufacturing foundries that supply our products are primarily located in Asia, as are the primary warehouses where we store finished goods for fulfillment of customer orders.

The following issues related to our third-party suppliers could have an adverse effect on our ability to meet customer demand and negatively impact our revenues, business operations, profitability and cash flows:

- our suppliers' failure or inability to react to shifts in product demand, including situations where demand for integrated circuits exceeds suppliers' capacity to meet that demand;
- a failure or inability by our suppliers to procure raw materials or allocate adequate raw materials for our products, or an increase in prices for raw materials or components;
- an inability to procure or utilize raw materials, components or products from our suppliers due to government prohibitions or restrictions on transactions with certain countries and/or companies, and alternative suppliers, raw material sources or raw materials are not available or not available in acceptable time frames or upon acceptable terms;
- a failure by our suppliers to allocate adequate manufacturing, assembly or test capacity for our products;
- our suppliers' failure or inability to develop or maintain, or a delay in developing or building out, manufacturing capacity for leading process technologies, including transitions to smaller geometry process technologies;
- the loss of a supplier or the failure or inability of a supplier to meet performance, quality or yield specifications or delivery schedules;
- additional expense or production delays as a result of qualifying a new supplier and commencing volume production or testing in the event of a loss of, or a decision to add or change, a supplier;
- natural disasters, the effects of climate change, acts of war or other geopolitical conflicts impacting the regions in which our suppliers and their manufacturing foundries or assembly, test or other facilities are located;
- health crises, including epidemics or pandemics, such as the COVID-19 pandemic, and government and business responses thereto, which impact our suppliers, including as a result of quarantines or closures;
- cyber-attacks on our suppliers' information technology (IT) systems, including those related to their manufacturing foundries or assembly, test or other facilities;
- trade or national security protection policies, particularly U.S. or Chinese government policies, that limit or prevent us from transacting business with suppliers of critical integrated circuit products, or that limit or prevent such suppliers from transacting business with us or from procuring materials, machinery or technology necessary to manufacture goods for us; and
- any other reduction, interruption, delay or limitation in our product supply sources.

We rely on sole- or limited-source suppliers for certain products, which may exacerbate the risks identified above, and subject us to other significant risks, including poor product performance and reduced control over delivery schedules, manufacturing capability and yields, quality assurance, quantity and costs. While we have established and may in the future establish alternate suppliers for certain products, these suppliers may require significant amounts of time and levels of support to bring such products to production, both of which may increase for complex or leading process technologies. As a result, we may invest a significant amount of effort and resources and incur higher costs to support and maintain such alternate suppliers. Further, the elimination or limitation of a foundry supplier's ability to manufacture components or products for us due to trade or national security protection policies could increase our vulnerability to sole- or limited-source arrangements and limit or prevent us from procuring critical components or products from those suppliers. Future consolidation of foundry suppliers could also increase our vulnerability to sole- or limited-source arrangements and reduce our suppliers' willingness to negotiate pricing, which could negatively impact our ability to achieve cost reductions, increase our manufacturing costs and limit the amount of capacity available to us. Our arrangements with our suppliers may obligate us to incur costs to manufacture, assemble and test our products that do not decrease at the same rate as decreases in pricing to our customers. Our ability, and that of our suppliers, to develop or maintain leading process technologies, including transitions to smaller geometry process technologies (which adds risk to manufacturing yields and reliability), and to effectively compete with the manufacturing processes and performance of our competitors, could impact our ability to introduce new products and meet customer demand, could increase our costs (possibly decreasing our margins) and could subject us to the risk of excess inventories. Any of the above could negatively impact our business, results of operations and cash flows.

Although we have long-term contracts with our suppliers, some of these contracts do not provide for long-term capacity commitments. To the extent we do not have firm commitments from our suppliers over a specific time period or for any specific quantity, our suppliers may allocate, and in the past have allocated, capacity to the manufacture, assembly and testing of products for their other customers (including our competitors) while reducing or limiting capacity to manufacture, assemble or test our products, and such capacity may be limited based on our suppliers' ability and willingness to invest in the capital required to manufacture in the leading process technologies. Our suppliers or potential alternate suppliers may also manufacture their own integrated circuits that compete with our products. Such suppliers have in the past allocated and may again allocate raw materials and manufacturing capacity to their own products and reduce or limit the production of our products. To the extent we do obtain long-term capacity commitments, we may incur additional costs related to those commitments or make non-refundable payments for capacity commitments that are not used. Further, certain of our suppliers have in the past attempted, and may in the future attempt, to unilaterally reduce their capacity commitments to us. Accordingly, capacity for our products may not be available when we need it. Finally, we may not receive reasonable pricing, manufacturing or delivery terms from our suppliers, and our ability to obtain favorable terms may be diminished during times of high demand and/or limited manufacturing capacity for integrated circuit products.

We cannot guarantee that the actions of our suppliers will not cause disruptions in our operations that could harm our ability to meet our delivery obligations to our customers or increase our cost of sales. To the extent we are unable to obtain adequate supply to meet our delivery obligations, we may be obligated to make payments to our customers for such shortfalls. Recently, the global semiconductor industry experienced demand for integrated circuits that exceeded the industry's capacity to meet that demand. Our ability to meet increased demand for our products has been and may in the future be limited due to the inability to obtain the additional manufacturing, assembly and test capacity necessary to fully meet such demand. If we are unable to fully meet customer demand, this could result in lost sales opportunities, reduced revenue growth and harm to our customer relationships. These issues may be exacerbated if customers overstate their expected demand requirements in order to procure additional supply, which could negatively impact our ability to forecast and to allocate supply appropriately among our customers. The above issues may also be exacerbated with respect to our platform solutions, which already entail a great deal of complexity due to differing lead-times, technologies and suppliers for each integrated circuit product included in such solutions. Additionally, our suppliers have in the past and may in the future increase their prices during periods of capacity constraints, or for other reasons, thus increasing our costs.

While capacity constraints have largely abated, we continue to see price increases from certain of our key semiconductor manufacturing suppliers which, without corresponding increases in the prices of our products, would negatively impact our margins.

We place orders with our suppliers using our and our customers' forecasts of demand for our products, which are based on a number of assumptions and estimates. As we move to smaller geometry process technologies, the manufacturing lead-time increases. As a result, the orders we place with our suppliers are generally only partially covered by commitments from our customers. If we, or our customers, overestimate demand, or if demand is impacted by factors outside of our or our customers' control, and such demand is not covered by a binding commitment from our customers, we may experience increased excess or obsolete inventory or reserve charges, which would negatively impact our results of operations. Further, to the extent our customers procure supply of our integrated circuit products beyond their current needs (i.e., build up inventory of our integrated circuit products), whether due to concerns over supply, overestimating demand and/or a decline in macroeconomic conditions, or otherwise, they may not purchase expected quantities of our products in subsequent quarters, which may negatively impact our revenues, results of operations and cash flows in such quarters.

See also the Risk Factor below titled *"There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model; environmental compliance and liability; impacts related to climate change; exposure to natural disasters, health crises, geopolitical conflicts and cyber-attacks; timely supply of equipment and materials; and various manufacturing issues"* as similar risks, as well as additional risks, may be applicable to our third-party suppliers' manufacturing facilities, which could result in disruptions to our business or additional costs to us, and negatively impact our results of operations.

There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model; environmental compliance and liability; impacts related to climate change; exposure to natural disasters, health crises, geopolitical conflicts and cyber-attacks; timely supply of equipment and materials; and various manufacturing issues.

We operate various facilities that manufacture certain of our RFFE modules and RF filter products. Our manufacturing facilities are characterized by a higher portion of fixed costs relative to a fabless model. We may be faced with a decline in the utilization rates of our manufacturing facilities due to decreases in demand for our products, including in less favorable industry or macroeconomic environments, or due to our failure to win and/or retain designs with OEMs. As a result, from time to time our manufacturing facilities operate at lower capacity levels, while the fixed costs associated with such facilities continue to be incurred, resulting in lower gross profit. Due to the factors above, we are currently experiencing, and expect to continue to experience in the near term, such underutilization of capacity at our manufacturing facilities.

We are subject to many complex environmental, health and safety laws, regulations and rules in each jurisdiction in which we operate our manufacturing (and research and development) facilities. The regulatory landscape in these areas continues to evolve, and we anticipate additional laws, regulations and rules in the future. In particular, new, or changes in, environmental and climate change laws, regulations or rules, including relating to greenhouse gas emissions, could lead to new or additional investments in production processes and could increase environmental compliance expenditures. In addition, certain environmental laws impose strict, and in certain circumstances joint and several, liability on current or previous owners or operators of real property, or parties who arranged for hazardous substances to be sent to disposal or treatment facilities, for the cost of investigation, removal or remediation of hazardous substances. As a result, we may incur clean-up costs in connection with any such removal or remediation efforts, as well as other third-party claims in connection with contaminated sites. In addition, we could be held liable for consequences arising out of human exposure to hazardous substances or other environmental damage. If we, or companies or facilities we acquire or have acquired, in the past failed or in the future fail to comply with any such laws and regulations, then we could incur regulatory penalties, fines and legal liabilities; suspension of production; significant compliance requirements; alteration of our manufacturing, assembly or test processes; restriction on our ability to modify or expand our facilities; damage to our reputation; and restrictions on our operations or sales. We are also required to obtain and maintain environmental permits from governmental authorities for certain of our operations. We cannot make assurances that we will at all times be in compliance with such laws, regulations, rules and permits. See also the risk factor titled *"Our business may suffer due to the impact of, or our failure to comply with, the various existing, new or amended laws, regulations, policies or standards to which we are subject."*

Climate change concerns and the potential resulting environmental impact may result in new environmental, health and safety laws and regulations that may affect us, our suppliers and our customers. Such laws or regulations could cause us to incur additional direct costs for compliance, including costs associated with changes to manufacturing processes or the procurement of raw materials used in manufacturing processes, as well as increased indirect costs resulting from our customers, suppliers or both incurring additional compliance costs that are passed on to us. These costs may adversely impact our results of operations and financial condition. In addition, climate change could cause certain natural disasters, such as drought, wildfires, storms, flooding or rising sea levels, to occur more frequently or with greater intensity, which could pose physical risks to our manufacturing facilities or our suppliers' facilities, could disrupt the availability of water necessary for the operation of such facilities, and could increase or decrease temperatures resulting in increased operating costs and/or business disruption.

We have manufacturing facilities in Asia and Europe, and the primary warehouses where we store finished goods are located in Asia. If tsunamis, flooding, earthquakes, volcanic eruptions, drought or other natural disasters, effects of climate change, acts of war or other geopolitical conflicts were to damage, destroy or disrupt any of these facilities, it could disrupt our operations, cease or delay production and shipments of inventory and result in costly repairs, replacements or other costs and lost business. In addition, natural disasters, effects of climate change, acts of war or other geopolitical conflicts may result in disruptions in transportation, distribution channels and supply chains and significant increases in the prices of raw materials. Further, health crises, including epidemics or pandemics, such as the COVID-19 pandemic, and government and business responses thereto, could affect our manufacturing facilities, including by resulting in quarantines and/or closures, which would result in disruptions to and potential closures of our manufacturing operations. Our manufacturing operations could also be disrupted by cyber-attacks on our IT systems, as described in the Risk Factor below titled *"Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information."*

Our manufacturing operations depend on securing raw materials, equipment and other supplies in adequate quality and quantity in a timely manner from multiple suppliers, and in some cases, we rely on a limited number of suppliers, including in some cases sole suppliers, particularly in Asia. There may be cases where supplies of raw materials, equipment and other products are interrupted or limited by natural disaster, geopolitical conflict, accident or some other event affecting a supplier or source of raw materials; supply is suspended due to quality or other issues; there is a shortage of supply due to a rapid increase in demand; and/or we or our suppliers are prohibited from utilizing certain raw materials, or products or components that incorporate such raw materials, due to government restrictions related to the countries from which such raw materials originate, and acceptable alternative suppliers, raw materials or raw materials sources are not available or not available in acceptable time frames or upon acceptable terms, among others, which could impact production and prevent us from supplying our products to our customers. If the supply-demand balance is disrupted, it may considerably increase costs of manufacturing due to increased prices we pay for raw materials. From time to time, suppliers may extend lead times, limit amounts supplied to us or increase prices due to capacity constraints or other factors. Additionally, supply and costs of raw materials, equipment and other products may be negatively impacted by trade and/or national security protection policies, such as tariffs, or actions by governments that limit or prevent us from transacting business with certain countries or companies or that limit or prevent certain companies from transacting business with us, or trade tensions, particularly with countries in Asia. Further, it may be difficult or impossible to substitute one piece of equipment for another or replace one type of material with another. A failure by our suppliers to deliver our requirements could result in disruptions to our manufacturing operations.

Our manufacturing processes are highly complex, require advanced and costly equipment and must be continuously modified to improve yields and performance. Difficulties in the production process can reduce yields or interrupt production, and as a result, we may not be able to deliver our products or do so in a timely, cost-effective or competitive manner. Further, to remain competitive and meet customer demand, we may be required to improve our facilities and process technologies and carry out extensive research and development, each of which may require investment of significant amounts of capital and may have a material adverse effect on our results of operations, cash flows and financial condition.

From time to time, we begin to purchase equipment to meet expected customer demand in advance of any purchase orders or long-term purchase commitments. Further, we typically begin manufacturing our products using our or our customers' forecasts of demand for our products, which are based on a number of assumptions and estimates and may not be covered by long-term purchase commitments. As a result, we may incur increased inventory and manufacturing costs and/or record impairment charges to the extent anticipated sales ultimately do not materialize or are lower than expected. If we or our customers overestimate demand, or if demand is impacted by factors outside of our or our customers' control, and such demand is not covered by a binding commitment from our customers, we may experience higher inventory carrying and operating costs and/or increased excess or obsolete inventory or reserve charges, which would negatively impact our results of operations.

RISKS RELATED TO CYBERSECURITY OR MISAPPROPRIATION OF OUR CRITICAL INFORMATION

Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information.

Third parties regularly attempt to gain unauthorized access to our IT systems, and many such attacks are increasingly more sophisticated. These attacks, which might be related to industrial, corporate or other espionage, criminal hackers or state-sponsored intrusions, include trying to covertly introduce malware to our computers and networks, including those in our manufacturing operations, exploiting vulnerabilities in hardware, software or other IT infrastructure and impersonating authorized users, among others. We are also subject to ransom-style cyber-attacks, which could expose our confidential or proprietary information, request payment of money and/or impact our IT systems and cause widespread disruption to our business, including our manufacturing operations. Third parties that store and/or process our confidential information, or that provide products, software or services used in our IT infrastructure (including applications), may be subject to similar attacks, which could also result in malware being introduced into our IT infrastructure, e.g., through the third parties' software and/or software updates. Such attacks could result in the misappropriation, theft, misuse, disclosure, loss or destruction of the technology, intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, as well as damage to or disruptions in our IT systems. We believe that we have a robust cybersecurity program that is aligned to international cybersecurity frameworks, and that we leverage industry best practices across people, processes and technologies in an attempt to mitigate cybersecurity threats. However, we cannot anticipate, detect, repel or implement fully effective preventative measures against all cybersecurity threats, particularly because the techniques used are increasingly sophisticated and constantly evolving. As part of our cybersecurity program, we seek to identify and remediate vulnerabilities in our IT systems and software (including third party software used in our IT systems) that could be exploited by hackers or other malicious actors. However, we may not be aware of all such vulnerabilities, and we may fail to identify and/or remediate such vulnerabilities before they are exploited. Attempts to gain unauthorized access to our IT systems or other attacks have in the past, in certain instances and to certain degrees, been successful (but have not caused significant harm), and may in the future be successful, and in some cases, we might be unaware of an incident or its magnitude and effects.

In addition, employees and former employees, in particular former employees who become employees of our competitors, customers, licensees or other third parties, including state actors, have in the past and may in the future misappropriate, wrongfully use, publish or provide to our competitors, customers, licensees or other third parties, including state actors, our technology, intellectual property or other proprietary or confidential information. This risk is exacerbated as competitors for talent, particularly engineering talent, increasingly attempt to hire our employees. See also the Risk Factor titled *"We may not be able to attract and retain qualified employees, and our attempts to operate under a hybrid work model may not be successful."* Similarly, we provide access to certain of our technology, intellectual property and other proprietary or confidential information to our direct and indirect customers and licensees and certain of our consultants, who have in the past and may in the future wrongfully use such technology, intellectual property or information, or wrongfully disclose such technology, intellectual property or information to third parties, including our competitors or state actors. We also provide access to certain of our technology, intellectual property and other proprietary or confidential information to certain of our joint venture partners, including those affiliated with state actors and including in foreign jurisdictions where ownership restrictions may require us to take a minority ownership interest in the joint venture. Such joint venture partners may wrongfully use such technology, intellectual property or information, or wrongfully disclose such technology, intellectual property or information to third parties, including our competitors or state actors. Our technology, intellectual property and other proprietary or confidential information that we have provided to customers, licensees or other business partners could also be wrongfully obtained by third parties through cyber-attacks on such customers', licensees' or other business partners' IT systems.

The misappropriation, theft, misuse, disclosure, loss or destruction of the technology, intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives, cause us to lose business, damage our reputation, subject us to legal or regulatory proceedings, cause us to incur other loss or liability and otherwise adversely affect our business. We expect to continue to devote significant resources to the security of our IT systems and our technology, intellectual property and proprietary and confidential information.

Further, China has implemented, and other countries or regions may implement, cybersecurity laws that require our overall IT security environment to meet certain standards and/or be certified. Such laws may be complex, ambiguous and subject to interpretation, which may create uncertainty regarding compliance. As a result, our efforts to comply with such laws may be expensive and may fail, which could adversely affect our business, results of operations and cash flows. In addition, our contracts with certain of our customers require us to obtain cybersecurity certifications for our IT systems. Failure to obtain or maintain the necessary cybersecurity certifications could result in loss of future revenues, damage to our customer relationships and reputation, and a shift of business to our competitors.

RISKS RELATED TO HUMAN CAPITAL MANAGEMENT

We may not be able to attract and retain qualified employees, and our attempts to operate under a hybrid work model may not be successful.

Our future success depends upon the continued service of our executive officers and other key management and technical personnel, and on our ability to continue to identify, attract, retain and motivate them. Implementing our business strategy requires specialized engineering and other talent, as our revenues are highly dependent on technological and product innovations. In addition, in order to extend our business into certain new and expanded product areas and industries and applications beyond mobile handsets, we need to attract, retain and motivate engineering and other technical personnel with specialized skills in these areas, and these skills are in high demand among our competitors. The market for employees in our industry is extremely competitive, and competitors for talent, particularly engineering talent, increasingly attempt to hire, and to varying degrees have been successful in hiring, our employees or employment candidates, including by establishing or expanding local offices near our headquarters in San Diego, California. Further, the increased availability of remote working arrangements has expanded the pool of companies that can compete for our employees and employment candidates. A number of such competitors for talent are significantly larger than us and/or offer compensation in excess of what we offer or other benefits that we generally do not offer, such as the ability to permanently work from home. Further, existing immigration laws make it more difficult for us to recruit and retain highly skilled foreign national graduates of universities in the United States, making the pool of available talent even smaller. If we are unable to attract and retain qualified employees, our business may be harmed. The COVID-19 pandemic caused us to modify our workforce practices, including having the vast majority of our employees work from home. While we have generally reopened our offices, we are currently operating under a hybrid work model, meaning that the majority of our employees have the flexibility to work remotely at least some of the time. The hybrid work model may impair our ability to maintain our collaborative and innovative culture, and may cause disruptions among our employees, including decreases in productivity, challenges in communications between on-site and off-site employees and, potentially, employee dissatisfaction and attrition. Further, any future attempt to transition away from the hybrid work model to more stringent on-site work requirements may result in employee dissatisfaction and attrition. If we fail to retain key employees or maintain employee productivity as a result of the hybrid work model or an attempt to return to more on-site work, our business could be adversely impacted.

RISKS SPECIFIC TO OUR LICENSING BUSINESS

The continued and future success of our licensing programs requires us to continue to evolve our patent portfolio and to renew or renegotiate license agreements that are expiring.

We own a very strong portfolio of issued and pending patents related to 3G, 4G, 5G and other technologies. It is critical that we continue to evolve our patent portfolio, particularly in 5G. If we do not maintain a strong portfolio that is applicable to current and future standards, products and services, our future licensing revenues could be negatively impacted.

Our patent license agreements in effect that generate a significant portion of our licensing revenues are effective for a specified term. To receive royalties after the expiration date of the specified term, we will need to extend or modify such license agreements or enter into new license agreements with such licensees. We might not be able to extend or modify license agreements, or enter into new license agreements, in the future without negatively affecting the material terms and conditions of our license agreements with such licensees, and such modifications or new agreements may negatively impact our revenues. In some circumstances, we may extend, modify or enter into new license agreements as a result of arbitration or litigation, and terms imposed by arbitrators or courts may be less favorable to us than existing terms and may impact the financial or other terms of license agreements not subject to the litigation or arbitration. If there is a delay in extending, modifying or entering into a new license agreement with a licensee, there would be a delay in our ability to recognize revenues related to that licensee's product sales. Further, if we are unable to reach agreement on such modifications or new agreements, it could result in patent infringement litigation with such licensees.

Efforts by some original equipment manufacturers (OEMs) to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business.

From time to time, companies initiate various strategies to attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property. These strategies have included: (i) litigation, often alleging infringement of patents held by such companies, patent misuse, patent exhaustion, patent invalidity or unenforceability of our patents or licenses, alleging that we do not license our patents on fair, reasonable and nondiscriminatory (FRAND) terms, or alleging some form of unfair competition or competition law violation; (ii) taking positions contrary to our understanding (and/or the plain language) of their contracts with us; (iii) appeals to governmental authorities; (iv) collective action, including working with wireless operators, standards bodies, other like-minded companies and organizations, on both formal and informal bases, to adopt intellectual property policies and practices that could have the effect of limiting returns on intellectual property innovations; (v) lobbying governmental regulators and elected officials for the purpose of seeking the reduction of royalty rates or the base on which royalties are calculated, seeking to impose some form of compulsory licensing or weakening a patent holder's ability to enforce its rights or obtain a fair return for such rights; and (vi) attempts by licensees to shift their royalty obligation to their suppliers in order to lower the wholesale (i.e., licensee's) selling price on which the royalty is calculated.

In addition, certain licensees have disputed, underreported, underpaid, not reported or not paid royalties owed to us under their license agreements or reported to us in a manner that is not in compliance with their contractual obligations, and certain companies have yet to enter into or have delayed entering into or renewing license agreements with us for their use of our intellectual property, and they or others may engage in such behavior in the future. The fact that one or more licensees dispute, underreport, underpay, do not report or do not pay royalties owed to us may encourage other licensees to take similar actions or not renew their existing license agreements, and may encourage other licensees or unlicensed companies to delay entering into, or to not enter into, new license agreements. Further, to the extent such licensees and companies increase their device share, the negative impact of their underreporting, underpayment, non-payment or non-reporting on our business, revenues, results of operations, cash flows and financial condition will be exacerbated.

We have been in the past and are currently subject to various litigation and/or governmental investigations and proceedings. Certain of these matters are described in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We may become subject to other litigation or governmental investigations or proceedings in the future. Additionally, certain of our direct and indirect customers and licensees have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition. See also the Risk Factors below titled *"Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations"* and *"Our business may suffer as a result of adverse rulings in governmental investigations or proceedings or other legal proceedings."*

In addition, in connection with our participation in SDOs, we, like other patent owners, generally have made contractual commitments to such organizations to license those of our patents that would necessarily be infringed by standard-compliant products as set forth in those commitments (referred to as standard-essential patents). Some manufacturers and users of standard-compliant products advance interpretations of these commitments that are adverse to our licensing business, including interpretations that would limit the amount of royalties that we could collect on the licensing of our standard-essential patent portfolio.

Further, some third parties have proposed significant changes to existing intellectual property policies for implementation by SDOs and other industry organizations with the goal of significantly devaluing standard-essential patents. For example, some have put forth proposals which would require a maximum aggregate intellectual property royalty rate for the use of all standard-essential patents owned by all of the member companies to be applied to the selling price of any product implementing the relevant standard. They have further proposed that such maximum aggregate royalty rate be apportioned to each member company with standard-essential patents based upon the number of standard-essential patents held by such company. Others have proposed that injunctions should not be an available remedy for infringement of standard-essential patents and have made proposals that could severely limit damage awards and other remedies by courts for patent infringement (e.g., by limiting the base upon which the royalty rate may be applied). A number of these strategies are purportedly based on interpretations of the policies of certain SDOs concerning the licensing of patents that are or may be essential to industry standards and on our (or other companies') alleged failure to abide by these policies.

Some SDOs, courts and governmental agencies have adopted, and may in the future adopt, some or all of these interpretations or proposals in a manner adverse to our interests, including in litigation to which we may not be a party. Further, SDOs in certain countries may attempt to modify widely accepted standards and claim the resulting standard as their own.

We expect that such proposals, interpretations and strategies will continue in the future, and if successful, our business model would be harmed, either by limiting or eliminating our ability to collect royalties (or by reducing the royalties we can collect) on all or a portion of our standard-essential patent portfolio, limiting our return on investment with respect to new technologies, limiting our ability to seek injunctions against infringers of our standard-essential patents, constraining our ability to make licensing commitments when submitting our technologies for inclusion in future standards (which could make our technologies less likely to be included in such standards) or forcing us to work outside of SDOs or other industry groups to promote our new technologies, and our revenues, results of operations and cash flows could be negatively impacted. In addition, the legal and other costs associated with asserting or defending our positions have been and may in the future be significant. We expect that such challenges, regardless of their merits, will continue into the foreseeable future and will require the investment of substantial management time and financial resources.

Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations.

As described in the Risk Factor below titled "*Our business may suffer as a result of adverse rulings in governmental investigations or proceedings or other legal proceedings,*" we have been in the past, currently are and may in the future be subject to various governmental investigations and/or legal proceedings challenging our patent licensing practices. Certain of these matters are described in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We believe that one intent of certain of these governmental investigations and legal proceedings has been to reduce the amount of royalties that licensees are required to pay to us for their use of our intellectual property.

If we were required to reduce the royalty rates in our patent license agreements, our revenues, earnings and cash flows would be negatively impacted absent a sufficient increase in the volume of sales of devices upon which royalties are paid.

Similarly, if we were required to reduce the base on which our royalties are calculated (e.g., license at the chipset level rather than at the device level), our revenues, earnings and cash flows would be negatively impacted unless there was a sufficient increase in the volume of sales of devices upon which royalties are paid or we were able to increase our royalty rates to offset the decrease in revenues resulting from such lower royalty base (assuming the absolute royalty dollars were below any relevant royalty caps).

If we were required to grant patent licenses to chipset manufacturers (which could lead to implementing a more complex, multi-level licensing structure in which we license certain portions of our patent portfolio to chipset manufacturers and other portions to OEMs), we would incur additional transaction costs, which may be significant, and we could incur delays in recognizing revenues until license negotiations were completed. In addition, our licensing revenues and earnings would be negatively impacted if we were not able to obtain, in the aggregate, equivalent revenues under such a multi-level licensing structure.

If we were required to sell chipsets to OEMs that do not have a license to our patents, our licensing programs could be negatively impacted by patent exhaustion claims raised by such unlicensed OEMs (i.e., claims that our sale of chipsets to such OEMs forecloses us from asserting any patents substantially embodied by the chipsets against such OEMs). Such sales could provide OEMs with a defense in the event we asserted our patents against them to obtain licensing revenue for those patents. This could have a material adverse effect on our licensing programs and our results of operations, cash flows and financial condition.

To the extent that we were required to implement any of these licensing and/or business practices, including by modifying or renegotiating our existing license agreements or pursuing other commercial arrangements, we would incur additional transaction costs, which may be significant, we could incur delays in recognizing revenues until license negotiations were completed, and our business, revenues, results of operations, cash flows and financial condition could be harmed. The impact of any such changes to our licensing practices could vary widely and by jurisdiction, depending on the specific outcomes and the geographic scope of such outcomes. In addition, if we were required to make modifications to our licensing practices in one jurisdiction, licensees or governmental agencies in other jurisdictions may attempt to obtain similar outcomes for themselves or for such other jurisdictions, as applicable, which could result in increased legal costs and further harm to our business, revenues, results of operations, cash flows and financial condition.

RISKS RELATED TO REGULATORY AND LEGAL CHALLENGES

Our business may suffer as a result of adverse rulings in governmental investigations or proceedings or other legal proceedings.

We have been in the past and currently are subject to various governmental investigations and proceedings. Certain of these matters are described in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.” Key allegations or findings in those matters include or have in the past included, among others: that we violate FRAND licensing commitments by refusing to grant licenses to chipset manufacturers; that our royalty rates are too high; that the base on which our royalties are calculated should be something less than the wholesale (i.e., licensee’s) selling price of the applicable device (minus certain permitted deductions); that we unlawfully require customers to execute a patent license before we sell them cellular modem chipsets; that we have entered into exclusive agreements with chipset customers that foreclose competition; that we leverage our position in baseband chipsets in the RFFE space; and that we violate antitrust laws and engage in anticompetitive conduct and unfair methods of competition. We may become subject to other litigation or governmental investigations or proceedings in the future.

Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others: the loss of our ability to enforce one or more of our patents; injunctions; monetary damages, fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed OEMs or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. In addition, a governmental body in a particular country or region may successfully assert and impose remedies with effects that extend beyond the borders of that country or region. If some or all of our license agreements are declared invalid or unenforceable and/or we are required to renegotiate these license agreements, we may not receive, or may not be able to recognize, some or any licensing or royalty revenues under the impacted license agreements unless and until we enter into new license agreements; and even licensees whose license agreements are not impacted may demand to renegotiate their agreements or invoke the dispute resolution provision in their agreements, and we may not be able to recognize some or any revenues under such agreements. The renegotiation of license agreements could result in terms that are less favorable to us than existing terms, or lead to arbitration or litigation to resolve the licensing terms, which could also be less favorable to us than existing terms, and each of which could take months or years. Licensees may underreport, underpay, not report or not pay royalties owed to us pending the conclusion of such negotiations, arbitration or litigation. In addition, we may be sued for alleged overpayments of past royalties paid to us, including private antitrust actions seeking treble damages under U.S. antitrust laws.

The occurrence of any of the above could have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition, and our stock price could decline, possibly significantly, in which case we may have to significantly cut costs and other uses of cash, including in research and development, significantly impairing our ability to maintain product and technology leadership and invest in next generation technologies. Further, depending on the breadth and severity of the circumstances above, we may have to reduce, suspend or eliminate our capital return programs, and our ability to timely pay our indebtedness may be impacted. These challenges have required, and may in the future require, the investment of significant management time and attention and have resulted, and may in the future result, in significant legal costs.

RISKS RELATED TO INDUSTRY DYNAMICS AND COMPETITION

Our revenues depend on our customers' and licensees' sales of products and services based on CDMA, OFDMA and other communications technologies, including 5G, and customer demand for our products based on these technologies.

We develop, patent and commercialize technology and products based on CDMA, OFDMA and other communications technologies, which are primarily wireless. We depend on our customers and licensees to develop devices and services based on these technologies to drive consumer demand for new 3G/4G/5G multimode and single-mode devices, and to establish the selling prices for such devices. Further, the timing of our shipments of our products is dependent on the timing of our customers' and licensees' deployments of new devices and services based on these technologies. Increasingly, we also depend on operators of wireless networks, our customers and licensees and other third parties to incorporate these technologies into new device types and into industries and applications beyond mobile handsets, such as automotive and IoT, among others. Commercial deployments of 5G networks and devices have begun and are expected to continue for the foreseeable future. However, the timing and scale of such deployments, in certain regions, have been delayed due to the COVID-19 pandemic and may be further delayed for reasons that are beyond our control.

Our revenues and growth in revenues could be negatively impacted, our business may be harmed and our substantial investments in these technologies may not provide us an adequate return, if: our customers' and licensees' revenues and sales of products, particularly premium-tier products, and services using these technologies, and average selling prices of such products, decline due to, for example, the maturity of smartphone penetration in developed regions, including China; we do not continue to maintain our intellectual property and technical leadership in 5G, including in ongoing 5G standardization efforts; we are unable to drive the adoption of our products into networks and devices, including devices beyond mobile handsets; or consumers' rates of replacement of smartphones and other devices decline.

Our industry is subject to intense competition in an environment of rapid technological change. Our success depends in part on our ability to adapt to such change and compete effectively; and such change and competition could result in decreased demand for our products and technologies or declining average selling prices for our products or those of our customers or licensees.

Our products and technologies face significant competition. Competition may intensify as our current competitors expand their product offerings, improve their products or reduce the prices of their products as part of a strategy to maintain existing business and customers or attract new business and customers, as new opportunities develop, and as new competitors enter the industry. Competition in wireless communications is affected by various factors that include, among others: OEM concentrations; vertical integration; competition in certain geographic regions; government intervention or support of national industries or competitors; the ability to maintain product differentiation in light of evolving industry standards and speed of technological change (including the transition to smaller geometry process technologies and the demand for always on, always connected capabilities); access to capacity in the supply chain; and value-added features that drive selling prices and consumer demand for new 3G/4G/5G multimode and single-mode devices.

We anticipate that additional competitors will introduce products as a result of growth opportunities in wireless communications, the trend toward global expansion by foreign and domestic competitors, and technological and public policy changes. Additionally, the semiconductor industry has experienced and may continue to experience consolidation, which could result in significant changes to the competitive landscape. For example, if any key supplier of technologies and intellectual property to the semiconductor industry was sold to one of our competitors, it could negatively affect our ability to procure or license such technologies and intellectual property in the future, at all or upon acceptable terms which could have wide-ranging impacts on our business and operations.

We expect that our future success will depend on, among other factors, our ability to:

- differentiate our integrated circuit products with innovative technologies across multiple products and features (e.g., modem, RFFE, including millimeter wave (mmWave), graphics and other processors, camera and connectivity) and with smaller geometry process technologies that drive both performance and lower power consumption;

- develop and offer integrated circuit products at competitive cost and price points and to effectively cover all geographic regions and all device tiers;
- continue to be a leader in mobile, and drive the adoption of our technologies and integrated circuit products, including RFFE, into the most popular device models and across a broad spectrum of devices in mobile, such as smartphones, tablets, laptops and other mobile computing devices;
- increase or accelerate adoption of our technologies and products in industries and applications outside of mobile handsets, including automotive and IoT;

- maintain or accelerate demand for our integrated circuit products at the premium device tier, while also driving the adoption of our products into high, mid- and low-tier devices across all regions;
- remain a leader in 5G technology development, standardization, intellectual property creation and licensing, and develop, commercialize and remain a leading supplier of 5G integrated circuit products, including RFFE products;
- maintain access to sufficient capacity in the supply chain relative to our competitors to meet customer demand;
- create standalone value and contribute to the success of our existing businesses through acquisitions, joint ventures and other strategic transactions, and by developing customer, licensee, vendor, distributor and other channel relationships in new industries and applications;
- identify potential acquisition targets that will grow or sustain our business or address strategic needs, reach agreement on terms acceptable to us, close the transactions and effectively integrate these new businesses, products, technologies and employees;
- provide leading products and technologies to OEMs, high level operating systems (HLOS) providers, operators, cloud providers and other industry participants as competitors, new industry entrants and other factors continue to affect the industry landscape;
- be a preferred partner and sustain preferred relationships providing integrated circuit products that support multiple operating system and infrastructure platforms to industry participants that effectively commercialize new devices using these platforms; and
- continue to develop brand recognition to effectively compete against better known companies in computing and other consumer driven segments and to deepen our presence in significant emerging regions and China.

We compete with many different semiconductor companies, ranging from multinational companies with integrated research and development, manufacturing, sales and marketing organizations across a broad spectrum of product lines, to companies that are focused on a single application, industry or standard product, including those that produce products for mobile handsets, automotive or IoT, among others. Most of these competitors compete with us with respect to some, but not all, of our businesses or product lines. Companies that design integrated circuits based on CDMA, OFDMA, Wi-Fi or their derivatives are generally competitors or potential competitors. Examples (some of which are strategic partners of ours in other areas) include Apple, Broadcom, MediaTek, Nvidia, NXP Semiconductors, Qorvo, Samsung, Skyworks, Texas Instruments and UNISOC. Some of these current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to use our competitors' integrated circuit products, to utilize their own internally-developed integrated circuit products and/or sell such products to others, or to utilize alternative technologies; lower cost structures or a willingness and ability to accept lower prices or lower margins for their products, particularly in China; foreign government support of other technologies, competitors or OEMs that sell devices that do not contain our integrated circuit products; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; the development and sale of infrastructure equipment for wireless networks, which may enable such competitors to better optimize their integrated circuit products for performance on those networks; more extensive relationships with local distribution companies and OEMs in certain geographic regions (such as China); more experience in industries and applications beyond mobile handsets (such as automotive and IoT); and a more established presence in certain regions.

In addition, certain of our largest integrated circuit customers have in the past utilized, currently utilize and may in the future utilize our competitors' integrated circuit products in some or all of their devices, rather than our products. Further, certain of those customers have developed, are developing or may develop their own integrated circuit products (effectively making them competitors), which they have in the past utilized, currently utilize and may in the future utilize in some or all of their devices, rather than our products. See also the Risk Factor titled "*Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products)*."

Further, political actions, including trade and/or national security protection policies, or other actions by governments, particularly the U.S. and Chinese governments, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our customers or suppliers; limit, prevent or discourage certain of our customers or suppliers from transacting business with us; or make it more expensive to do so. This could advantage our competitors by enabling them with increased sales, economies of scale, operating income and/or cash flows, and/or enabling critical technology transfer, allowing them to increase their investments in technology development, research and development, and commercialization of products. See also the Risk Factor titled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.*"

Competition in any or all product tiers may result in the loss of business or customers, which would negatively impact our business, revenues, results of operations, cash flows and financial condition. Such competition may also reduce average selling prices for our chipset products or the products of our customers and licensees. Certain of these dynamics are particularly pronounced in emerging regions and China where competitors may have lower cost structures or may have a willingness and ability to accept lower prices or lower margins on their products. Reductions in the average selling prices of our chipset products, without a corresponding increase in volumes, would negatively impact our revenues, and without corresponding decreases in average unit costs, would negatively impact our margins. In addition, reductions in the average selling prices of our licensees' products, unless offset by an increase in volumes, would generally decrease total royalties payable to us, negatively impacting our licensing revenues.

RISKS RELATED TO PRODUCT DEFECTS OR SECURITY VULNERABILITIES

Failures in our products, or in the products of our customers or licensees, including those resulting from security vulnerabilities, defects or errors, could harm our business.

Our products are complex and may contain defects, errors or security vulnerabilities, or experience failures or unsatisfactory performance, due to any number of issues, including issues in materials, design, fabrication, packaging and/or use within a system. Development of products in new domains of technology, and the migration to integrated circuit technologies with smaller geometric feature sizes, increases complexity and adds risk to manufacturing yields and reliability, and increases the likelihood of product defects, errors or security vulnerabilities. Defects, errors, security vulnerabilities or other unintended functionality could also be introduced into our products by cyber-attacks or other actions by malicious actors, either directly or through third-party products or software used in our products or IT infrastructure (including applications). Further, because of the complexity of our products, defects, errors or security vulnerabilities might only be detected when the products are in use. Risks associated with product or technology defects, errors or security vulnerabilities are exacerbated by the fact that our customers typically integrate our products into consumer and other devices.

The use of devices containing our products to interact with untrusted systems or otherwise access untrusted content creates a risk of exposing the system hardware and software in those devices to malicious attacks. Further, security vulnerabilities in our products or the technologies we use could expose our customers, or end users of our customers' products, to hackers or other unscrupulous third parties who develop and deploy malware that could attack our products or our customers' products or IT infrastructure. Such attacks could result in the disruption of our customers' businesses or the misappropriation, theft, misuse, disclosure, loss or destruction of the technology or intellectual property, or the proprietary, confidential or personal information, of our customers, their employees or the end users of our customers' devices. While we continue to focus on this issue and take measures to safeguard our products from cybersecurity threats, device capabilities continue to evolve, enabling more elaborate functionality and applications, and increasing the risk of security failures, and techniques used to perpetrate cybersecurity attacks are increasingly sophisticated and constantly evolving. See also the Risk Factor titled "*Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information*."

Our products may be responsible for critical functions in our customers' products and networks. Failure of our products to perform to specifications, meet certain regulatory or industry standards (including product safety and information security standards, which may differ by region, geography and industry, and which are particularly stringent in the automotive industry), or other product defects, errors or security vulnerabilities, could lead to substantial damage to the products we sell to our customers, the devices into which our products are integrated and the end users of such devices, and potentially to our customers' IT infrastructure. Such defects, errors or security vulnerabilities could give rise to significant costs, including costs related to developing solutions, recalling products, repairing or replacing defective products, writing down defective inventory or indemnification obligations under our agreements, and could result in the loss of sales and divert the attention of our engineering personnel from our product development efforts. In addition, defects, errors or security vulnerabilities in our products could result in failure to achieve market acceptance, a loss of design wins, a shifting of business to our competitors, and litigation or regulatory action against us, and could harm our reputation, our relationships with customers and partners and our ability to attract new customers, as well as the perceptions of our brand. Other potential adverse impacts of product defects, errors or security vulnerabilities include shipment delays, write-offs of property, plant and equipment and intangible assets, and losses on unfavorable purchase commitments. In addition, defects, errors or security vulnerabilities in the products of our customers or licensees could cause a delay or decrease in demand for the products into which our products are integrated, and thus for our products.

In addition, the occurrence of defects, errors or security vulnerabilities may give rise to product liability claims, particularly if such defects, errors or security vulnerabilities in our products or the technology we use, or the products into which they are integrated, result in personal injury or death, and could result in significant costs, expenses and losses. If a product liability claim is brought against us, the cost of defending the claim could be significant, and could divert the attention of our technical and management personnel and harm our business, even if we are successful. We may be named in product liability claims even if there is no evidence that our products caused the damage in question, and even though we may have indemnity from our customers, and such claims could result in significant costs and expenses. We may also be required to indemnify and/or defend our customers from product liability claims relating to our products. Further, our business liability insurance may be inadequate, may not cover the claims, and future coverage may be unavailable on acceptable terms, which could adversely impact our financial results. The above is exacerbated by the fact that our products may be used, and perform critical functions, in various high-risk applications such as: automobiles, including ADAS/AD functions; cameras and artificial intelligence, including home and enterprise security; home automation, including smoke and noxious gas detectors; medical condition monitoring; location and asset tracking and management, including wearables for child safety and elderly health; robotics, including public safety drones and autonomous municipality vehicles; and extended reality (XR) for treatment of phobias or PTSD, early detection of disorders or special needs, among others.

Accordingly, defects, errors or security vulnerabilities in our products or the technologies we use could have an adverse impact on us, on our customers and the end users of our customers' products. If any of these risks materialize, there could be a material adverse effect on our business, results of operations and financial condition.

RISKS RELATED TO INTELLECTUAL PROPERTY

The enforcement and protection of our intellectual property may be expensive, could fail to prevent misappropriation or unauthorized use of our intellectual property, could result in the loss of our ability to enforce one or more patents, and could be adversely affected by changes in patent laws, by laws in certain foreign jurisdictions that may not effectively protect our intellectual property and by ineffective enforcement of laws in such jurisdictions.

We rely primarily on patent, copyright, trademark and trade secret laws, as well as nondisclosure and confidentiality agreements, international treaties and other methods, to protect our intellectual property, including our patent portfolio. Policing unauthorized use of our products, technologies and intellectual property is difficult and time consuming. The steps we have taken have not always prevented, and we cannot be certain the steps we take in the future will prevent, the misappropriation or unauthorized use of our products, technologies or intellectual property, particularly in foreign countries where the laws may not protect our rights as fully or as readily as U.S. laws or where the enforcement of such laws may be lacking or ineffective. See also the Risk Factor titled *"Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information."*

Some industry participants who have a vested interest in devaluing patents in general, or standard-essential patents in particular, have mounted attacks on certain patent systems, increasing the likelihood of changes to established patent laws. We cannot predict with certainty the long-term effects of any potential changes. In the United States, there is continued discussion regarding potential patent law changes, and there is current and potential future litigation regarding patents, the outcomes of which could be detrimental to our licensing business. Further, the laws in certain foreign countries in which our patents are or may be licensed, or our products are or may be manufactured or sold, including certain countries in Asia, may not protect our intellectual property rights to the same extent as the laws in the United States. In addition, we cannot be certain that the laws and policies of any country or the practices of any standards bodies, foreign or domestic, with respect to intellectual property enforcement or licensing or the adoption of standards, will not be changed in the future in ways that are detrimental to our licensing programs or to the sale or use of our products or technologies.

We have had and may in the future have difficulty in certain circumstances in protecting or enforcing our intellectual property and contracts, including collecting royalties for use of our patent portfolio due to, among others: refusal by certain licensees to report and pay all or a portion of the royalties they owe to us; policies or political actions of governments, including trade protection and national security policies; challenges to our licensing practices under competition laws; adoption of mandatory licensing provisions by foreign jurisdictions; failure of foreign courts to recognize and enforce judgments of contract breach and damages issued by courts in the United States; and challenges before competition agencies to our licensing business or the pricing and integration of additional features and functionality into our chipset products. See also the Risk Factors titled "*Efforts by some original equipment manufacturers (OEMs) to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business*" and "*Our business may suffer as a result of adverse rulings in governmental investigations or proceedings or other legal proceedings*."

We have engaged in litigation and arbitration in the past and may need to further litigate or arbitrate in the future to enforce our contract and intellectual property rights, protect our trade secrets or determine the validity and scope of proprietary rights of others. As a result of any such litigation or arbitration, we could lose our ability to enforce one or more patents, portions of our license agreements could be determined to be invalid or unenforceable (which may in turn result in other licensees either not complying with their existing license agreements or initiating litigation or arbitration), license terms (including but not limited to royalty rates for the use of our intellectual property) could be imposed that are less favorable to us than existing terms, and we could incur substantial costs. Any action we take to enforce our contract or intellectual property rights could be costly and could absorb significant management time and attention, which, in turn, could negatively impact our results of operations and cash flows. Further, even a positive resolution to our enforcement efforts may take time to conclude, which may reduce our revenues and cash resources available for other purposes, such as research and development, in the periods prior to conclusion.

Additionally, although our license agreements generally provide us with the right to audit the books and records of licensees, audits can be expensive, time consuming, incomplete and subject to dispute. Further, certain licensees may not comply with the obligation to provide full access to their books and records. To the extent we do not aggressively enforce our rights under our license agreements, licensees may not comply with their existing license agreements, and to the extent we do not aggressively pursue unlicensed companies to enter into license agreements with us for their use of our intellectual property, other unlicensed companies may not enter into license agreements.

See also the Risk Factors titled "*Efforts by some original equipment manufacturers (OEMs) to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business*" and *"Our business and* *operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information."*

Claims by other companies that we infringe their intellectual property could adversely affect our business.

From time to time, companies have asserted, and may again assert, patent, copyright or other intellectual property claims against us relating to our technologies or products, including those we have acquired from other companies. These claims have resulted and may again result in our involvement in litigation, and we are currently involved in such litigation, including those described in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We may not prevail in such litigation given, among other factors, the complex technical issues and inherent uncertainties in intellectual property litigation. If any of our products were found to infringe another company's intellectual property, we could be subject to an injunction or be required to redesign our products, or to license such intellectual property or pay damages or other compensation to such other company (any of which could be costly). If we are unable to redesign our products, license such intellectual property used in our products or otherwise distribute our products (e.g., through a licensed supplier), we could be prohibited from making and selling our products. Similarly, our suppliers could be found to infringe another company's intellectual property, and such suppliers could then be enjoined from providing products or services to us.

In any potential dispute involving us and another company's patents or other intellectual property, our chipset foundries, semiconductor assembly and test providers and customers could also become the targets of litigation. We are contingently liable under certain product sales, services, license and other agreements to indemnify certain customers, chipset foundries and semiconductor assembly and test service providers against certain types of liability and damages arising from qualifying claims of patent infringement by products sold by us, or by intellectual property provided by us to our chipset foundries and semiconductor assembly and test service providers. Reimbursements under indemnification arrangements could have an adverse effect on our results of operations and cash flows. Furthermore, any such litigation could severely disrupt the supply of our products and the businesses of our chipset customers and their customers, which in turn could harm our relationships with them and could result in a decline in our chipset sales or a reduction in our licensees' sales, causing a corresponding decline in our chipset or licensing revenues. Any claims, regardless of their merit, could be time consuming to address, result in costly litigation, divert the efforts of our technical and management personnel and/or cause product release or shipment delays, any of which could have an adverse effect on our results of operations and cash flows.

We may continue to be involved in litigation and may have to appear in front of administrative bodies (such as the United States International Trade Commission) to defend against patent assertions against our products by companies, some of whom are attempting to gain competitive advantage or leverage in licensing negotiations. We may not be successful in such proceedings, and if we are not, the range of possible outcomes is very broad and may include, for example, monetary damages or fines or other orders to pay money, royalty payments, injunctions on the sale of certain of our integrated circuit products (or on the sale of our customers' devices using such products) or the issuance of orders to cease certain conduct or modify our business practices. Further, a governmental body in a particular country or region may assert, and may be successful in imposing, remedies with effects that extend beyond the borders of that country or region. In addition, a negative outcome in any such proceeding could severely disrupt the business of our customers and their wireless operator customers, which in turn could harm our relationships with them and could result in a decline in our chipset sales or a reduction in our licensees' sales, causing corresponding declines in our chipset or licensing revenues.

Our use of open source software may harm our business.

Certain of our software and our suppliers' software may contain or may be derived from "open source" software, and we have seen, and believe that we will continue to see, customers request that we develop products, including software associated with our integrated circuit products, that incorporate open source software elements and operate in an open source environment, which, under certain open source licenses, may offer accessibility to a portion of our products' source code and may expose our related intellectual property to adverse licensing conditions. Licensing of such software may impose certain obligations on us if we were to distribute derivative works of that software. For example, these obligations may require us to make source code for the derivative works available to our customers in a manner that allows them to make such source code available to their customers or license such derivative works under a particular type of license that is different than what we customarily use to license our software. Furthermore, in the course of product development, we may make contributions to third-party open source projects that could subject our intellectual property to adverse licensing conditions. For example, to encourage the growth of a software ecosystem that is interoperable with our products, we may need to contribute certain implementations under the open source licensing terms that govern such projects, which may adversely impact our associated intellectual property. Developing open source products, while adequately protecting the intellectual property upon which our licensing programs depends, may prove burdensome and time-consuming under certain circumstances, thereby placing us at a competitive disadvantage, and we may not adequately protect our intellectual property. Also, our use and our customers' use of open source software may subject our products and our customers' products to governmental and third-party scrutiny and delays in product certification, which could cause customers to view our products as less desirable than our competitors' products.

GENERAL RISK FACTORS

The COVID-19 pandemic, or a similar health crisis, may impact our business or results of operations in the future.

The COVID-19 pandemic resulted in significant economic uncertainty, significant declines in business and consumer confidence and global demand in the wireless industry (among others) and a global economic slowdown, which negatively affected our financial results over certain periods. Specifically, throughout most of calendar 2020 and into early calendar 2021, the decline in demand for smartphones and other consumer devices sold by our customers or licensees resulted in decreased demand for our integrated circuit products and a decrease in the royalties we earned on the licensing of our intellectual property. Similarly, during calendar 2022, spikes in COVID-19 cases in certain parts of China have led the Chinese government to impose lockdowns, which have adversely affected consumer demand in the region and may continue to impact demand in the future.

The COVID-19 pandemic also caused us to modify our workforce practices, such as having the vast majority of our employees work from home. While we have generally reopened our offices and are currently operating under a hybrid work model, we could be negatively affected in the future if, among others, a significant number of our employees, or employees who perform critical functions, become ill and/or are quarantined as the result of exposure to COVID-19, or a similar health crisis, or if government policies restrict the ability of those employees to perform their critical functions. See also the Risk Factor titled "*We may not be able to attract and retain qualified employees, and our attempts to operate under a hybrid work model may not be successful.*"

The COVID-19 pandemic, or a similar health crisis that may arise in the future, could impact our business, results of operations and financial condition in the manner described above, and/or through delayed, reduced or cancelled customer orders; disruptions or delays in our supply chain; the inability of our customers or licensees to purchase or pay for our products or technologies; the insolvency of key suppliers, customers or licensees; delays in reporting or payments from our customers or licensees; or failures by other counterparties. The degree to which the COVID-19 pandemic, or a similar health crisis, may impact our future business, results of operations and financial condition will depend on future developments, which are uncertain, including but not limited to the duration of the pandemic or other health crisis; spikes in cases in various geographic regions; the emergence, spread and severity of new virus or disease variants; the availability, adoption and efficacy of vaccines or other medical treatments; and government responses and other actions to limit the spread of the virus or disease or to mitigate resulting negative economic effects. We are similarly unable to predict the extent to which COVID-19 or similar health crisis may impact our customers, licensees, suppliers and other partners and their financial conditions, but adverse effects on these parties could also adversely affect us. To the extent the COVID-19 pandemic or a similar health crisis adversely affects our business, results of operations or financial condition, it may also have the effect of exacerbating the other risks discussed in this "Risk Factors" section.

We operate in the highly cyclical semiconductor industry, which is subject to significant downturns. We are also susceptible to declines in global, regional and local economic conditions generally. Our stock price and financial results are subject to substantial quarterly and annual fluctuations due to these dynamics, among others.

The semiconductor industry is highly cyclical, volatile, subject to downturns and characterized by constant and rapid technological change, price erosion, evolving technical standards, frequent new product introductions, short product life cycles and fluctuations in product supply and demand. Periods of downturns have been characterized by diminished demand for end-user products, high inventory levels, excess or obsolete inventory adjustments or reserves, underutilization of manufacturing capacity, changes in revenue mix and erosion of average selling prices. We expect our business to continue to be subject to such cyclical downturns. During such downturns, our revenues may decline, and our results of operations and financial condition may be adversely impacted. We are currently seeing and expect to continue to see weakness in the macroeconomic environment (negatively impacting consumer demand for smartphones and other devices that incorporate our products and technologies) and elevated inventory levels at our customers (negatively impacting the volume of chipsets they purchase from us until such inventory is depleted). Until these conditions improve, we expect that both of these dynamics will have a negative impact on our revenues, results of operations and cash flows.

A decline in global, regional or local economic conditions, such as we are currently seeing, or a slow-down in economic growth, particularly in geographic regions with high concentrations of wireless voice and data users or high concentrations of our customers or licensees, could also have adverse, wide-ranging effects on our business and financial results, including: a decrease in demand for our products and technologies; a decrease in demand for the products and services of our customers or licensees; the inability of our suppliers to deliver on their supply commitments to us, our inability to supply our products to our customers and/or the inability of our customers or licensees to supply their products to end users; the insolvency of key suppliers, customers or licensees; delays in reporting or payments from our customers or licensees; failures by counterparties; and/or negative effects on wireless device inventories. In addition, our customers' and licensees' ability to purchase or pay for our products and intellectual property and network operators' ability to upgrade their wireless networks could be adversely affected, potentially leading to a reduction, cancellation or delay of orders for our products. Acts of war, terrorism or other geopolitical conflicts may also result in or contribute to declining economic conditions, disruptions to global supply chains and increased volatility in financial markets, among other effects. Further, inflationary pressure may increase our costs, including employee compensation costs, reduce demand for our products or those of our customers or licensees due to increased prices of those products, or result in employee attrition to the extent our compensation does not keep up with inflation, particularly if our competitors' compensation does.

Our stock price and financial results have fluctuated in the past and are likely to fluctuate in the future. Factors that may have a significant impact on the market price of our stock and our financial results include those identified above and throughout this Risk Factors section, as well as: volatility of the stock market in general and technology and semiconductor companies in particular; announcements concerning us, our suppliers, our competitors or our customers or licensees, including any announcement concerning the initiation of, or any developments in, any lawsuit or governmental investigation or proceeding against us; and variations between our actual financial results or guidance and expectations of securities analysts or investors, among others. In the past, securities class action litigation has been brought against companies following periods of volatility in the market price of their securities, among other reasons. We are and may in the future be the target of securities litigation. Securities litigation could result in substantial uninsured costs and divert management's attention and our resources. Certain legal matters, including certain securities litigation brought against us, are described in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

Our business may suffer due to the impact of, or our failure to comply with, the various existing, new or amended laws, regulations, policies or standards to which we are subject.

Our business and products, and those of our customers and licensees, are subject to various laws, rules and regulations globally, as well as government policies and the specifications of international, national and regional communications standards bodies (collectively, Regulations). These include, among others, Regulations related to: patent licensing practices; antitrust, competition and competitive business practices; the flow of funds out of certain countries (e.g., China); cybersecurity; imports and exports, such as the U.S. Export Administration Regulations administered by the U.S. Department of Commerce; protection of intellectual property; trade and trade protection including tariffs; foreign policy and national security; environmental protection (including climate change), health and safety; supply chain, responsible sourcing, including the use of conflict minerals, and human rights; spectrum availability and license issuance; adoption of standards; taxation; privacy and data protection; labor, employment and human capital; corporate governance; public disclosure; automotive industry safety and quality standards; and business conduct. Compliance with, or changes in the interpretation of, existing Regulations, the adoption of new Regulations, changes in the oversight of our activities by governments or standards bodies, or rulings in court, regulatory, administrative or other proceedings relating to such Regulations, among others, could have an adverse effect on our business and results of operations. See also the Risk Factors titled "*Our business may suffer as a result of adverse rulings in governmental investigations or proceedings or other legal proceedings,*" "*Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations,*" *"A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions,"* "*There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model; environmental compliance and liability; impacts related to climate change; exposure to natural disasters, health crises, geopolitical conflicts and cyber-attacks; timely supply of equipment and materials; and various manufacturing issues," and "Tax liabilities could adversely affect our results of operations."*

Regulations are complex and changing (which may create uncertainty regarding compliance), are subject to varying interpretations, and their application in practice may evolve over time. As a result, our efforts to comply with Regulations may fail, particularly if there is ambiguity as to how they should be applied in practice. Failure to comply with any Regulation may adversely affect our business, results of operations and cash flows. New Regulations, or evolving interpretations thereof, may cause us to incur higher costs as we revise current practices, policies or procedures; may divert management time and attention to compliance activities; and may negatively impact our ability to conduct business in certain jurisdictions.

There are risks associated with our debt.

Our outstanding debt and any additional debt we incur may have negative consequences on our business, including, among others: requiring us to use cash to pay the principal of and interest on our debt, thereby reducing the amount of cash available for other purposes; limiting our ability to obtain additional financing for working capital, capital expenditures, acquisitions, stock repurchases, dividends, general corporate or other purposes; and limiting our flexibility in planning for, or reacting to, changes in our business, industries or the market. Our ability to make payments of principal and interest on our indebtedness depends upon our future performance, which is subject to economic and political conditions, industry cycles and financial, business and other factors, many of which are beyond our control. If we are unable to generate sufficient cash flow from operations to service our debt, we may be required to, among others: refinance or restructure all or a portion of our debt; reduce or delay planned capital or operating expenditures; reduce, suspend or eliminate our dividend payments and/or our stock repurchase program; or sell selected assets. Such measures might not be sufficient to enable us to service our debt. In addition, any such refinancing, restructuring or sale of assets might not be available on economically favorable terms or at all, and if prevailing interest rates at the time of any such refinancing or restructuring are higher than our current rates, interest expense related to such refinancing or restructuring would increase. Further, if there are adverse changes in the ratings assigned to our debt securities by credit rating agencies, our borrowing costs, our ability to access debt financing in the future and the terms of such debt could be adversely affected.

Tax liabilities could adversely affect our results of operations.

We are subject to income taxes in the United States and numerous foreign jurisdictions. Significant judgment is required in determining our provision for income taxes. We regularly are subject to examination of our tax returns and reports by taxing authorities in the United States federal jurisdiction and various state and foreign jurisdictions, most notably in countries where we earn a routine return and the tax authorities believe substantial value-add activities are performed, as well as countries where we own intellectual property. The final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provisions and accruals. In such case, our income tax provision, results of operations and cash flows in the period or periods in which that determination is made could be negatively affected.

Tax rules may change in a manner that adversely affects our future reported results of operations or the way we conduct our business. Most of our income is taxable in the United States with a significant portion qualifying for preferential treatment as FDII (foreign-derived intangible income). Beginning in fiscal 2027, the effective tax rate for FDII increases from 13% to 16%. Further, if U.S. tax rates increase and/or the FDII deduction is eliminated or reduced, our provision for income taxes, results of operations and cash flows would be adversely (potentially materially) affected. Also, if our customers move manufacturing operations to the United States, our FDII deduction may be reduced.

Further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project that was undertaken by the Organization for Economic Co-operation and Development (OECD). The OECD, which represents a coalition of member countries, recommended changes to numerous long-standing tax principles related to transfer pricing and continues to develop new proposals including allocating greater taxing rights to countries where customers are located and establishing a minimum tax on global income. These changes, as adopted by countries, may increase tax uncertainty and may adversely affect our provision for income taxes, results of operations and cash flows.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

At September 25, 2022, we occupied the following facilities (square footage in millions):

	United States	Other Countries	Total
Owned facilities	4.4	0.7	5.1
Leased facilities	0.8	6.7	7.5
Total	5.2	7.4	12.6

Our headquarters and certain of our research and development and network management hub operations are located in San Diego, California. We also operate leased manufacturing facilities in China, Germany and Singapore, and we own and lease properties around the world for use as sales and administrative offices and research and development centers, primarily in the United States, India and China. Our facility leases expire at varying dates through 2032, not including renewals that are at our option. Several other owned and leased facilities are under construction totaling approximately 2.3 million additional square feet, primarily related to the construction of new facilities in India. We do not identify or allocate facilities by operating segment.

Information related to our additional capital requirements is provided in this Annual Report in “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the “Liquidity and Capital Resources” section under the heading “Additional Capital Requirements.” Additional information on net property, plant and equipment by geography is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 8. Segment Information.”

Item 3. Legal and Regulatory Proceedings

Information regarding legal and regulatory proceedings is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.” We are also engaged in numerous other legal actions arising in the ordinary course of our business (for example, proceedings relating to employment matters or the initiation or defense of proceedings relating to intellectual property rights), and while there can be no assurance, we believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information and Dividends

Our common stock is traded on the NASDAQ Global Select Market (NASDAQ) under the symbol "QCOM." At October 31, 2022, there were 6,349 holders of record of our common stock.

We currently intend to continue to pay quarterly cash dividends, subject to capital availability and our view that cash dividends are in the best interests of our stockholders. Future dividends may be affected by, among other items, our views on potential future capital availability and requirements, including those relating to research and development, creation and expansion of sales and distribution channels, investments and acquisitions, legal and regulatory risks, withholding of payments by one or more of our significant licensees and/or customers, fines and/or adverse rulings by government agencies, courts or arbitrators in legal or regulatory matters, stock repurchase programs, debt issuances, changes in federal, state or foreign income tax law, trade and/or national security protection policies, volatility in economies and financial markets or other macroeconomic conditions, and changes to our business model.

Issuer Purchases of Equity Securities

Our purchases of our equity securities in the fourth quarter of fiscal 2022 were:

	Total Number of Shares Purchased	Average Price Paid Per Share (1)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (2)
	(In thousands)		(In thousands)	(In millions)
June 27, 2022 to July 24, 2022	—	$ —	—	$ 8,619
July 25, 2022 to August 21, 2022	3,366	148.53	3,366	8,119
August 22, 2022 to September 25, 2022	—	—	—	8,119
Total	3,366		3,366	

(1) Average Price Paid Per Share excludes cash paid for commissions.

(2) On October 12, 2021, we announced a stock repurchase program authorizing us to repurchase up to $10.0 billion of our common stock. At September 25, 2022, $8.1 billion remained authorized for repurchase. The stock repurchase program has no expiration date. Shares withheld to satisfy statutory tax withholding requirements related to the vesting of share-based awards are not issued or considered stock repurchases under our stock repurchase program and, therefore, are excluded from the table above.

Unregistered Sales of Equity Securities

In connection with our acquisition of NuVia, Inc. (Nuvia), which closed in March 2021, we are obligated to issue shares of our common stock to three specific founders of Nuvia and certain affiliated entities of such founders from time to time upon the satisfaction of certain conditions. During the quarter ended September 25, 2022, we issued an aggregate of 106,425 additional shares of our common stock to the founders of Nuvia and their affiliates, each of whom had advised us that he or such entity was an accredited investor. These shares were issued in transactions not involving a public offering pursuant to the exemption from registration set forth in Section 4(a)(2) of the Securities Act.

Stock Performance Graph

The following graph compares the cumulative total stockholder return on our common stock, the Standard & Poor's 500 Stock Index (S&P 500) and the NASDAQ-100 Index (NASDAQ-100) for the five years ended September 25, 2022. The S&P 500 tracks the aggregate price performance of the equity securities of 500 United States companies selected by Standard & Poor's Index Committee to include companies in leading industries and to reflect the United States stock market. The NASDAQ-100 tracks the aggregate price performance of the 100 largest domestic and international non-financial securities listed on the NASDAQ Stock Market based on market capitalization. Our common stock is a component of each of the S&P 500 and the NASDAQ-100.

The total return for our stock and for each index assumes that $100 was invested at the market close on the last trading day for our fiscal year ended September 24, 2017 and that all dividends were reinvested. All returns are reported as of our fiscal year end, which is the last Sunday in September. Stockholder returns over the indicated period are based on historical data and should not be considered indicative of future stockholder returns.

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Item 6. (Reserved)

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

In addition to historical information, the following discussion contains forward-looking statements that are subject to risks and uncertainties. Actual results may differ materially from those referred to herein due to a number of factors, including but not limited to those described in "Part I, Item 1A. Risk Factors" and elsewhere in this Annual Report.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included in "Part II, Item 8. Financial Statements and Supplementary Data" of this Annual Report.

The following section generally discusses fiscal 2022 and 2021 items and year-to-year comparisons between fiscal 2022 and 2021. Discussions of fiscal 2020 items and year-to-year comparisons between fiscal 2021 and 2020 that are not included in this Annual Report can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of our Annual Report on Form 10-K for the fiscal year ended September 26, 2021.

Our Business and Operating Segments

We develop and commercialize foundational technologies and products used in mobile devices and other wireless products. We derive revenues principally from sales of integrated circuit products and licensing our intellectual property, including patents and other rights.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including QGOV (Qualcomm Government Technologies) and our cloud AI inference processing initiative.

Our reportable segments are operated by QUALCOMM Incorporated and its direct and indirect subsidiaries. QTL is operated by QUALCOMM Incorporated, which owns the vast majority of our patent portfolio. Substantially all of our products and services businesses, including QCT, and substantially all of our engineering and research and development functions, are operated by Qualcomm Technologies, Inc. (QTI), a wholly-owned subsidiary of QUALCOMM Incorporated, and QTI's subsidiaries. Neither QTI nor any of its subsidiaries has any right, power or authority to grant any licenses or other rights under or to any patents owned by QUALCOMM Incorporated.

Further information regarding our business and operating segments is provided in "Part I, Item 1. Business" of this Annual Report.

Seasonality. Many of our products and much of our intellectual property are incorporated into consumer wireless devices, which are subject to seasonality and other fluctuations in demand. Our revenues have historically fluctuated based on consumer demand for devices, as well as on the timing of customer/licensee device launches and/or innovation cycles (such as the transition to the next generation of wireless technologies). This has resulted in fluctuations in QCT revenues in advance of and during device launches incorporating our products and in QTL revenues when licensees' sales occur. These trends may or may not continue in the future. Further, the trends for QTL have been, and may in the future be, impacted by disputes and/or resolutions with licensees and/or governmental investigations or proceedings.

Fiscal 2022 Overview and Other Recent Events

Revenues were $44.2 billion, an increase of 32% compared to revenues of $33.6 billion in fiscal 2021, with net income of $12.9 billion, an increase of 43% compared to net income of $9.0 billion in fiscal 2021. Highlights from fiscal 2022 and other recent events included:

- QCT revenues increased by 39% in fiscal 2022 compared to the prior year, primarily due to an increase in average selling prices and favorable mix toward higher-tier 5G products along with higher integrated circuit shipments in handsets, as well as higher IoT revenues.
- On June 15, 2022, the General Court of the European Union issued a ruling annulling in its entirety the European Commission's (EC) 2018 decision, which previously imposed a fine of 997 million euros for which we had provided financial guarantees to satisfy the obligation in lieu of cash payment. As a result, in the third quarter of fiscal 2022, we recorded a $1.1 billion benefit in other income and a $62 million reduction in interest expense resulting from the reversal of the accrued fine and the associated interest previously recorded. See "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."
- On October 4, 2021, we and SSW Partners entered into a definitive agreement to acquire Veoneer, Inc. (Veoneer). The transaction closed on April 1, 2022. We funded substantially all of the total cash consideration paid in the transaction, which was approximately $4.7 billion. The operating results of the Non-Arriver businesses are reported as discontinued operations on a one quarter lag. Additional information related to this acquisition is included in this Annual Report in "Notes to Consolidated Financial Statements, Note 9. Acquisitions."

Results of Operations

Revenues (in millions)

	2022	2021	Change
Equipment and services	$ 37,171	$ 26,741	$ 10,430
Licensing	7,029	6,825	204
	$ 44,200	$ 33,566	$ 10,634

2022 vs. 2021

The increase in revenues in fiscal 2022 was primarily due to $10.4 billion in higher equipment and services revenues and $216 million in higher licensing revenues from our QCT segment.

Costs and Expenses (in millions, except percentages)

	2022	2021	Change
Cost of revenues	$ 18,635	$ 14,262	$ 4,373
Gross margin	58 %	58 %	

2022 vs. 2021

Gross margin percentage remained flat in fiscal 2022 primarily due to:

+ increase in QCT gross margin
- decrease in higher margin QTL licensing revenues in proportion to QCT revenues

	2022	2021	Change
Research and development	$ 8,194	$ 7,176	$ 1,018
% of revenues	19 %	21 %	

2022 vs. 2021

The increase in research and development expenses in fiscal 2022 was due to:

- **+** $856 million increase driven by higher costs related to the development of wireless and integrated circuit technologies (including 5G and application processor technologies), primarily driven by an increase in employee-related expenses
- **+** $303 million increase in share-based compensation expense
- **-** $141 million decrease in expenses driven by revaluation of our deferred compensation obligation on lower relative stock market performance (which resulted in a corresponding increase in net losses on deferred compensation plan assets within investment and other (expense) income, net due to the revaluation of the related assets)

	2022	2021	Change
Selling, general and administrative	$ 2,570	$ 2,339	$ 231
% of revenues	6 %	7 %	

2022 vs. 2021

The increase in selling, general and administrative expenses in fiscal 2022 was primarily due to:

- **+** $110 million increase in acquisition-related expenses, primarily related to the Veoneer transaction
- **+** $94 million increase in employee-related expenses
- **+** $74 million increase in share-based compensation expense
- **+** $33 million increase in litigation costs
- **+** $32 million increase in sales and marketing expenses
- **-** $127 million decrease in expenses driven by revaluation of our deferred compensation obligation on lower relative stock market performance

	2022	2021	Change
Other (income) expense	$ (1,059)	$ —	$ (1,059)

2022

Other income in fiscal 2022 consisted of a $1.1 billion benefit resulting from the 2018 EC fine reversal.

Interest Expense and Investment and Other (Expense) Income, Net (in millions)

	2022	2021	Change
Interest expense	$ 490	$ 559	$ (69)
Investment and other (expense) income, net			
Interest and dividend income	$ 91	$ 83	$ 8
Net (losses) gains on marketable securities	(363)	427	(790)
Net gains on other investments	113	470	(357)
Net (losses) gains on deferred compensation plan assets	(141)	130	(271)
Impairment losses on other investments	(47)	(33)	(14)
Net losses on derivative instruments	(37)	(14)	(23)
Equity in net (losses) earnings of investees	(7)	13	(20)
Net gains (losses) on foreign currency transactions	19	(32)	51
	$ (372)	$ 1,044	$ (1,416)

The decrease in interest expense in fiscal 2022 was primarily driven by a $62 million reversal of accrued interest recorded in the third quarter of fiscal 2022 related to the annulled 2018 EC fine.

Net losses on marketable securities in fiscal 2022 was primarily driven by the change in fair value of certain of our QSI marketable equity investments in early or growth stage companies. Net gains on marketable securities in fiscal 2021 was primarily driven by the initial public offerings of certain QSI equity investments. Net gains on other investments in fiscal 2021 was primarily driven by realized gains resulting from the sale of certain of our QSI non-marketable investments.

Income Tax Expense (in millions, except percentages)

The following table summarizes the primary factors that caused our annual tax provision from continuing operations to differ from the expected income tax provision at the U.S. federal statutory rate. Substantially all of our income is taxed in the U.S., of which a significant portion qualifies for preferential treatment as FDII (foreign-derived intangible income) at a 13% effective tax rate.

	2022	2021
Expected income tax provision at federal statutory tax rate	$ 3,150	$ 2,158
Benefit from FDII deduction	(753)	(550)
Excess tax benefit associated with share-based awards	(257)	(265)
Foreign currency losses related to foreign withholding tax receivable	243	12
Nontaxable reversal of 2018 EC fine	(224)	—
Benefit related to the research and development tax credit	(224)	(195)
Other	77	71
Income tax expense	$ 2,012	$ 1,231
Effective tax rate	13 %	12 %

Unrecognized tax benefits were $2.2 billion and $2.1 billion at September 25, 2022 and September 26, 2021, respectively. The increase in unrecognized tax benefits in fiscal 2022 was primarily due to expected refunds of Korean withholding taxes previously paid as licensees in Korea continue to withhold taxes on payments due under their licensing agreements at a rate higher than we believe is owed (which had an insignificant impact to our income tax provision). If successful, the refund will result in a corresponding reduction in U.S. foreign tax credits. We are subject to income taxes in the U.S. and numerous foreign jurisdictions and are currently under examination by various tax authorities worldwide, primarily related to transfer pricing. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts giving rise to a revision become known. At September 25, 2022, we believe our reserves are adequate based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Beginning in fiscal 2023, for federal income tax purposes, we are required to capitalize and amortize domestic research and development expenditures over five years and foreign research and development expenditures over fifteen years. Prior to such date, such expenditures are deducted as incurred. If this requirement is not delayed or repealed, our cash flow generated from operations will be adversely affected due to significantly higher cash tax payments. However, since the resulting deferred tax asset will be established at the statutory rate of 21% (rather than the effective rate of 13% to 16% after considering the FDII deduction), capitalization will favorably affect our provision for income taxes and results of operations. The adverse cash flow impact and favorable tax provision impact will diminish in future years as capitalized research and development expenditures amortize.

In August 2022, the Inflation Reduction Act (IRA) was enacted in the United States, which included, among other items, a 15% book minimum tax on adjusted financial statement earnings beginning in fiscal 2024. We do not expect this provision to have a material impact on our provision for income taxes, results of operations or cash flows. If the requirement to capitalize and amortize research and development expenditures beginning in fiscal 2023 is delayed or repealed, our cash flows may be impacted in future years under the IRA.

Discontinued Operations (in millions)

	2022	2021	Change
Discontinued operations, net of income taxes	$ (50)	$ —	$ (50)

Discontinued operations in fiscal 2022 related to net losses from the Non-Arriver businesses. Information regarding the Non-Arriver businesses is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 9. Acquisitions.”

Segment Results

The following should be read in conjunction with the fiscal 2022 and 2021 results of operations for each reportable segment included in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information."

QCT Segment (in millions, except percentages)

	2022	2021	Change
Revenues			
Handsets (1)	$ 25,027	$ 16,830	$ 8,197
RFFE (2)	4,330	4,158	172
Automotive (3)	1,372	975	397
IoT (internet of things) (4)	6,948	5,056	1,892
Total revenues	$ 37,677	$ 27,019	$ 10,658
EBT (5)	$ 12,837	$ 7,763	$ 5,074
EBT as a % of revenues	34 %	29 %	5 points

(1) Includes revenues from products sold for use in mobile handsets, excluding RFFE (radio frequency front-end) components.

(2) Includes all revenues from sales of 4G, 5G sub-6 and 5G millimeter wave RFFE products (a substantial portion of which are sold for use in mobile handsets) and excludes radio frequency transceiver components.

(3) Includes revenues from products sold for use in automobiles, including connectivity, digital cockpit and advanced driver assistance and automated driving.

(4) Primarily includes products sold for use in the following industries and applications: consumer (including computing, voice and music and XR), edge networking (including mobile broadband and wireless access points) and industrial (including handhelds, retail, transportation and logistics and utilities).

(5) Earnings (loss) before income taxes.

Substantially all of QCT's revenues consist of equipment and services revenues, which were $37.0 billion and $26.6 billion in fiscal 2022 and 2021, respectively. QCT handsets, automotive and IoT revenues mostly relate to sales of our Snapdragon platforms (which include processors and modems), stand-alone Mobile Data Modems, radio frequency transceiver, power management and wireless connectivity integrated chipsets.

2022 vs. 2021

The increase in QCT revenues in fiscal 2022 was primarily due to:

- \+ higher handset revenues, primarily driven by $6.6 billion in higher revenues per integrated circuit from increases in average selling prices and favorable mix toward higher-tier 5G products and $1.3 billion in higher integrated circuit shipments to major OEMs
- \+ higher RFFE revenues, driven by an increase in demand for 4G/5G products from major OEMs
- \+ higher automotive revenues, primarily driven by an increase in demand for digital cockpit products
- \+ higher IoT revenues across consumer, edge networking and industrial products, driven by a $951 million increase in demand, with the remaining increase of $941 million primarily due to favorable mix and higher average selling prices

QCT EBT as a percentage of revenues increased in fiscal 2022 due to:

- \+ higher revenues
- \+ higher gross margin percentage, primarily driven by higher average selling price and favorable mix towards higher-tier 5G products, partially offset by higher product costs
- \- higher operating expenses, primarily driven by higher research and development expenses

QTL Segment (in millions, except percentages)

	2022	2021	Change
Licensing revenues	$ 6,358	$ 6,320	$ 38
EBT	4,628	4,627	1
EBT as a % of revenues	73 %	73 %	—

2022 vs. 2021

The increase in QTL licensing revenues in fiscal 2022 was primarily due to:

+ $308 million increase in estimated revenues per unit, which was primarily driven by favorable mix, including 5G
- $299 million decrease in estimated sales of 3G/4G/5G-based multimode products

QTL EBT as a percentage of revenues remained flat in fiscal 2022.

QSI Segment (in millions)

	2022	2021	Change
Equipment and services revenues	$ 31	$ 45	$ (14)
EBT	(279)	916	(1,195)

2022 vs. 2021

The decrease in QSI EBT in fiscal 2022 was primarily due to a $1.1 billion decrease resulting from net losses on investments in fiscal 2022 compared to net gains on investments in fiscal 2021, which were primarily driven by the change in fair value of certain of our marketable equity investments in early or growth stage companies and lower realized gains resulting from the sale of certain of our non-marketable investments.

Looking Forward

In the coming years, we expect consumer demand for 3G/4G/5G multimode and 5G products and services to continue to ramp around the world as we continue to transition from 3G/4G multimode and 4G products and services. We believe that 5G combined with high-performance, low-power processing and on-device intelligence will continue to drive adoption of certain technologies that are already commonly used in smartphones by industries and applications beyond mobile handsets, such as automotive and IoT. We believe it is important that we remain a leader in 5G technology development, standardization, intellectual property creation and licensing, and a leading developer and supplier of 5G integrated circuit products in order to sustain and grow our business long term.

As we look forward to the next several quarters:

- We expect continued weakness in the macroeconomic environment (which will continue to negatively impact consumer demand for smartphones and other devices that incorporate our products and technologies) and our customers to draw down on their inventory (which is at elevated levels given the rapid deceleration in consumer demand and the easing of supply constraints, and which may take the next couple quarters to resolve), and that both of these dynamics will have a negative impact on our revenues, results of operations and cash flows compared to the prior year.
- While capacity constraints have largely abated, we expect to continue to see price increases from certain of our key semiconductor wafer suppliers.
- We expect commercial 5G network deployments and device launches will continue.
- We expect continued intense competition, particularly in China.
- Current U.S./China trade relations and/or national security protection policies may negatively impact our business, growth prospects and results of operations. See "Risk Factors" in this Annual Report, including the Risk Factor titled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.*"

The degree to which the COVID-19 pandemic impacts our business, financial condition and results of operations will depend on future developments, which are highly uncertain. See "Risk Factors" in this Annual Report, specifically the Risk Factor titled "*The COVID-19 pandemic, or a similar health crisis, may impact our business or results of operations in the future.*"

In addition to the foregoing business and market-based matters, we continue to devote resources to working with and educating participants in the wireless industry and governments as to the benefits of our licensing programs and our extensive technology investments in promoting a highly competitive and innovative wireless industry. However, we expect that certain companies may be dissatisfied with the need to pay reasonable royalties for the use of our technologies and not welcome the success of our licensing programs in enabling new, highly cost-effective competitors to their products. Accordingly, such companies, and/or governments or regulators, may continue to challenge our business model in various forums throughout the world.

Further discussion of risks related to our business is provided in "Part I, Item 1A. Risk Factors" included in this Annual Report.

Liquidity and Capital Resources

Our principal sources of liquidity are our existing cash, cash equivalents and marketable securities, cash generated from operations and cash provided by our debt programs. The following table presents selected financial information related to our liquidity as of and for the years ended September 25, 2022 and September 26, 2021 (in millions):

	September 25, 2022	September 26, 2021	Change
Cash and cash equivalents (1)	$ 2,773	$ 7,116	$ (4,343)
Marketable securities	3,609	5,298	(1,689)
Cash, cash equivalents and marketable securities	$ 6,382	$ 12,414	$ (6,032)

(1) Excludes $326 million of cash and cash equivalents classified as held for sale (included in other current assets) at September 25, 2022.

	2022	2021	Change
Net cash provided by operating activities	$ 9,096	$ 10,536	$ (1,440)
Net cash used by investing activities	(5,804)	(3,356)	(2,448)
Net cash used by financing activities	(7,196)	(6,798)	(398)

Cash, cash equivalents and marketable securities. The net decrease in cash, cash equivalents and marketable securities was primarily due to $4.9 billion in cash paid for acquisitions and other investments, net of cash acquired (primarily related to Veoneer), $3.2 billion in cash dividends paid, $3.1 billion in payments to repurchase shares of our common stock, $2.3 billion in capital expenditures and $766 million in payments of tax withholdings related to vesting of share-based awards. This was partially offset by net cash provided by operating activities, which was negatively impacted by advanced payments of $2.3 billion made to suppliers of our integrated circuit products under multi-year capacity commitments (which were included within other current assets and other assets), as well as $4.5 billion of net changes in other operating assets and liabilities (excluding the reversal of the 2018 EC fine), primarily consisting of increased working capital requirements, including higher inventory and related operating liabilities and an increase in accounts receivable as a result of higher revenues combined with the timing of integrated circuit shipments during the period (net of an increase in amounts accrued for customer incentive arrangements recorded as a reduction to accounts receivable). We may continue to see elevated working capital requirements in the near term.

Debt. In May 2022, we issued an aggregate principal amount of $1.5 billion of unsecured fixed-rate notes with varying maturities. The net proceeds, together with cash on hand, were used to repay $1.5 billion of fixed-rate notes that matured in May 2022. At September 25, 2022, we had $15.4 billion of principal floating- and fixed-rate notes outstanding, $1.4 billion of which matures in January 2023. The remaining debt has maturity dates in 2024 through 2052.

We have an unsecured commercial paper program, which provides for the issuance of up to $4.5 billion of commercial paper. Net proceeds from this program are used for general corporate purposes. At September 25, 2022, we had $499 million of commercial paper outstanding.

We also have a Revolving Credit Facility, which provides for unsecured revolving facility loans, swing line loans and letters of credit in an aggregate amount of up to $4.5 billion, which expires on December 8, 2025. At September 25, 2022, no amounts were outstanding under the Revolving Credit Facility.

We expect to issue new debt in the future. The amount and timing of any such new debt will depend on a number of factors, including but not limited to maturities of our existing debt, acquisitions and strategic investments, favorable and/or acceptable interest rates and changes in corporate income tax law. Additional information regarding our outstanding debt at September 25, 2022 is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 6. Debt.”

Income Taxes. At September 25, 2022, we estimated remaining future payments of $1.7 billion for a one-time U.S. repatriation tax accrued in fiscal 2018, after application of certain tax credits, which is payable in installments over the next four years. At September 25, 2022, other current liabilities included $207 million for the next installment due in January 2023. Beginning in fiscal 2023, we are required to capitalize and amortize research and development expenditures for federal income tax purposes. If this requirement is not delayed or repealed, our cash flow generated from operations will be adversely affected due to significantly higher cash tax payments in the near term. Additional information regarding our income taxes is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 3. Income Taxes.”

Capital Return Program. The following table summarizes stock repurchases, before commissions, and dividends paid during fiscal 2022 and 2021 (in millions, except per-share amounts):

	Stock Repurchase Program			Dividends		Total
	Shares	**Average Price Paid Per Share**	**Amount**	**Per Share**	**Amount**	**Amount**
2022	21	$ 149.95	$ 3,129	$ 2.86	$ 3,212	$ 6,341
2021	24	141.17	3,366	2.66	3,008	6,374

On October 12, 2021, we announced a $10.0 billion stock repurchase program. The stock repurchase program has no expiration date. At September 25, 2022, $8.1 billion remained authorized for repurchase under our stock repurchase program. Our stock repurchase programs are subject to periodic evaluations to determine when and if repurchases are in the best interests of our stockholders, and we may accelerate, suspend, delay or discontinue repurchases at any time.

On October 14, 2022, we announced a cash dividend of $0.75 per share on our common stock, payable on December 15, 2022 to stockholders of record as of the close of business on December 1, 2022. We currently intend to continue to use cash dividends as a means of returning capital to stockholders, subject to capital availability and our view that cash dividends are in the best interests of our stockholders, among other factors.

Additional Capital Requirements. We believe our cash, cash equivalents and marketable securities, our expected cash flow generated from operations and our expected financing activities will satisfy our working and other capital requirements for at least the next 12 months based on our current business plans. Recent and expected working and other capital requirements, in addition to the above matters, also include the items described below:

- Our purchase obligations at September 25, 2022, which primarily relate to purchase commitments with certain suppliers of our integrated circuit products, including those under multi-year capacity commitments, and certain other expenses, some of which relate to research and development activities and capital expenditures, totaled $24.5 billion, of which, $13.3 billion is expected to be paid in the next 12 months. We expect a significant decrease in advance payments made under our multi-year capacity commitments as compared to fiscal 2022.
- Our research and development expenditures were $8.2 billion in fiscal 2022 and $7.2 billion in fiscal 2021.
- Cash outflows for capital expenditures were $2.3 billion in fiscal 2022 and $1.9 billion in fiscal 2021.
- Amounts related to future lease payments for operating lease obligations at September 25, 2022 totaled $863 million, with $129 million expected to be paid within the next 12 months.
- We expect to continue making strategic investments and acquisitions, the amounts of which could vary significantly. For further information related to our most recent acquisitions, including details regarding the Non-Arriver businesses presented as held for sale, see “Notes to Consolidated Financial Statements, Note 9. Acquisitions” in this Annual Report.

Further, regulatory authorities in certain jurisdictions have investigated our business practices and instituted proceedings against us and they or other regulatory authorities may do so in the future. Additionally, certain of our direct and indirect customers and licensees have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, financial condition and cash flows. See “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies” and “Part I, Item 1A. Risk Factors” in this Annual Report.

Critical Accounting Estimates

The preparation of our consolidated financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and disclosure of contingent assets and liabilities. We base our estimates on historical and anticipated results and trends and on various other assumptions that we believe are reasonable under the circumstances, including assumptions as to future events. By their nature, estimates are inherently subject to a degree of uncertainty. Although we believe that our estimates and the assumptions supporting our assessments are reasonable, actual results could differ materially from our estimates and assumptions, and could be material to our consolidated financial statements.

In addition to our critical accounting estimates and policies below, refer to “Note 1. Significant Accounting Policies” and “Note 2. Composition of Certain Financial Statement Items” included in this Annual Report in “Notes to Consolidated Financial Statements" for further information. If the impact of changes in our critical accounting estimates are material or considered necessary to understand our results of operations for the periods presented, then such information is disclosed within this Annual Report in "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations."

Revenue Recognition. We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. We estimate and recognize sales-based royalties on such licensed products in the period in which the licensees' sales occur, which is based largely on preliminary royalty estimates provided by our licensees. For fiscal 2022 and

2021, actual amounts for sales-based royalties have been materially consistent with such estimates, and no significant reversals of revenues have been required as a result of adjustments to prior period royalty estimates.

Impairment of Non-marketable Equity Investments. We monitor our investments for events or circumstances that could indicate impairment, including those that result from observable price adjustments. In fiscal 2021, and to a lesser extent in fiscal 2022, significant evaluation and judgments were required in determining whether such investments were impaired due to the continuing effects of the COVID-19 pandemic (as well as the effects of other macroeconomic factors), and if so, the extent of such impairment. This included, among other items: (i) assessing the business impacts that COVID-19 had on our investees, including taking into consideration the investee's industry and geographic location and the impact to its customers, suppliers and employees, as applicable; (ii) evaluating the investees' ability to respond to the impacts of COVID-19, including any significant deterioration in the investee's financial condition and cash flows, as well as assessing liquidity and/or going concern risks; and (iii) considering any appreciation in fair value that has not been recognized in the carrying values of such investments. In fiscal 2022 and 2021, there were no significant impairment losses or adjustments to our previous judgments and estimates recorded.

Inventories. We measure inventory at the lower of cost or net realizable value considering judgments and estimates related to future customer demand and other market conditions, such as the impact of certain capacity constraints experienced across the semiconductor industry through the third quarter of fiscal 2022 and in fiscal 2021, as well as the impact of the macroeconomic environment in fiscal 2022. Although we believe these estimates are reasonable, any significant changes in customer demand that are less favorable than our previous estimates may require additional inventory write-downs and would be reflected in cost of sales resulting in a negative impact to our gross margin in that period. For fiscal 2022 and 2021, the net effect from changes in this estimate and related reserves was less than 2% of cost of revenues during each period.

Impairment of Goodwill, Other Indefinite-Lived Assets and Long-Lived Assets. We monitor our goodwill, other indefinite-lived assets and long-lived assets for the existence of impairment indicators and apply judgments in the valuation methods and underlying assumptions utilized in such assessments. During fiscal 2022 and fiscal 2021, impairment charges for long-lived assets were not material. Additionally, the estimated fair values of our QCT and QTL reporting units, based on our qualitative assessment, were substantially in excess of their respective carrying values at September 25, 2022.

Legal and Regulatory Proceedings. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. We face difficulties in evaluating or estimating likely outcomes or the amount of possible loss in certain legal and regulatory proceedings.

Income Taxes. We make significant judgments and estimates in determining our provision for income taxes, including our assessment of our income tax positions given the uncertainties involved in the interpretation and application of complex tax laws and regulations in various taxing jurisdictions.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Marketable Securities

We have made investments in marketable securities of companies of varying size, style, industry and geography and changes in investment allocations may affect the price volatility of our investments.

Equity Price Risk. At September 25, 2022, the recorded value of our marketable equity securities was $164 million. A 10% decrease in the market price of our marketable equity securities at September 25, 2022 would have caused a decrease in the carrying amounts of these securities of $16 million. A 10% decrease in the market price of our marketable equity securities at September 26, 2021 would have caused a decrease in the carrying amounts of these securities of $68 million. Certain of our marketable equity investments are in early or growth stage companies, and the fair values of these investments have been and may continue to be subject to increased volatility.

Interest Rate Risk. We invest a portion of our cash in a number of diversified fixed- and floating-rate securities consisting of cash equivalents, marketable debt securities and time and demand deposits that are subject to interest rate risk. At September 25, 2022 and September 26, 2021, a hypothetical increase in interest rates of 100 basis points across the entire yield curve on our holdings would have resulted in a decrease of $36 million and $50 million, respectively, in the fair value of our holdings.

Other Investments

Equity Price Risk. We hold investments in non-marketable equity instruments in privately held companies that may be impacted by equity price risks. Volatility in the equity markets and the current macroeconomic environment could negatively affect our investees' ability to raise additional capital as well as our ability to realize value from our investments through initial public offerings, mergers or private sales. Consequently, we could incur impairment losses or realized losses on all or part of the values of our non-marketable equity investments. At September 25, 2022, the aggregate carrying value of our non-marketable equity investments (including those accounted for under the equity method) was included in other assets and was $1.3 billion.

Debt and Interest Rate Swap Agreements

Interest Rate Risk. As substantially all of our debt is comprised of unsecured fixed-rate notes, we are not subject to significant interest rate risk. At September 25, 2022, we had an aggregate principal amount of $500 million in unsecured floating-rate notes due January 30, 2023. The interest rates on our floating-rate notes are based on LIBOR. At September 25, 2022 and September 26, 2021, a hypothetical increase in LIBOR-based interest rates of 100 basis points would cause a negligible increase to interest expense on an annualized basis as it relates to our floating-rate notes. At September 25, 2022, we also had $499 million in commercial paper outstanding, for which our exposure to interest rate risk was negligible based on the original maturities of approximately three months or less.

From time to time, we manage our exposure to certain interest rate risks related to our long-term debt through the use of interest rate swaps. During fiscal 2022, we entered into interest rate swaps that are designated as fair value hedges with an aggregate notional amount of $2.1 billion to effectively convert certain fixed-rate interest payments into floating-rate payments on our outstanding debt. We entered into these agreements, in part, to manage interest rate risk associated with our cash equivalents and marketable securities, in addition to changes in the fair value of our outstanding debt. At September 25, 2022, a hypothetical increase in interest rates of 100 basis points would not cause a loss as an increase in interest expense related to these interest rate swaps agreements would be offset by an increase in interest income from our cash equivalents and marketable securities portfolio.

At September 25, 2022 and September 26, 2021, we had outstanding forward-starting interest rate swaps with an aggregate notional amount of $1.6 billion and $2.6 billion, respectively, to hedge the variability of forecasted interest payments on anticipated debt issuances. The interest rates on our interest rate swaps are based on LIBOR. At September 25, 2022 and September 26, 2021, a hypothetical decrease in interest rates of 100 basis points would cause a negligible and $23 million increase, respectively, to interest expense on an annualized basis resulting from the changes in fair values of the interest rate swaps related to our anticipated debt issuances.

Foreign Exchange Risk

We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative and non-derivative financial instruments, including foreign currency forward and option contracts with financial counterparties and net investment hedges. We utilize such derivative financial instruments for hedging or risk management purposes rather than for speculative purposes. Counterparties to these derivative contracts are all major banking institutions. In the event of the financial insolvency or distress of a counterparty to our derivative financial instruments, we may be unable to settle transactions if the counterparty does not provide us with sufficient collateral to secure its net settlement obligations to us, which could have a negative impact on our results.

Foreign Currency Options. At September 25, 2022, our net asset related to foreign currency options designated as hedges of foreign currency risk on royalties earned from certain licensees was $19 million. At September 25, 2022 and September 26, 2021, if our forecasted royalty revenues for currencies in which we hedge were to decline by 10% and foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would not incur a loss as our hedge positions would continue to be fully effective.

Foreign Currency Forwards. At September 25, 2022, our net liability related to foreign currency forward contracts designated as hedges of foreign currency risk on certain operating expenditure transactions was $133 million. If our forecasted operating expenditures for currencies in which we hedge were to decline by 10% and foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would incur a negligible loss. Based on forecasts at September 26, 2021, assuming the same hypothetical market conditions, we would have incurred a negligible loss.

At September 25, 2022, our net liability related to foreign currency forward contracts not designated as hedging instruments used to manage foreign currency risk on certain receivables and payables was negligible. At September 25, 2022 and September 26, 2021, if the foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would not incur a loss as the change in the fair value of the foreign currency forward contracts would be offset by the change in fair value of the related receivables and/or payables being economically hedged.

Net Investment Hedges. In the third quarter of fiscal 2022, as a result of the reversal of the 2018 EC fine, we discontinued the associated net investment hedge. At September 25, 2022, we have designated $235 million of a certain foreign currency-denominated liability, excluding accrued interest, as a hedge of our net investment in a foreign subsidiary. At September 25, 2022 and September 26, 2021, if foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, there would be an increase of $23 million and $145 million, respectively, in the accumulated other comprehensive loss attributable to the cumulative foreign currency translation adjustment related to our net investment hedge. The change in value recorded in cumulative foreign currency translation adjustment would be expected to offset a corresponding foreign currency translation gain or loss from our investment in the foreign subsidiary.

Functional Currency. Financial assets and liabilities held by consolidated subsidiaries that are not denominated in the functional currency of those entities are subject to the effects of currency fluctuations and may affect reported earnings. As a global company, we face exposure to adverse movements in foreign currency exchange rates. We may hedge currency exposures associated with certain assets and liabilities denominated in nonfunctional currencies and certain anticipated nonfunctional currency transactions. As a result, we could experience unanticipated gains or losses on anticipated foreign currency cash flows, as well as economic loss with respect to the recoverability of investments. While we may hedge certain transactions with non-U.S. customers, declines in currency values in certain regions may, if not reversed, adversely affect future product sales because our products may become more expensive to purchase in the countries of the affected currencies.

Our analysis methods used to assess and mitigate the risks discussed above should not be considered projections of future risks. Additional information regarding the financial instruments mentioned above is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies," "Notes to Consolidated Financial Statements, Note 2. Composition of Certain Financial Statement Items," "Notes to Consolidated Financial Statements, Note 6. Debt," "Notes to Consolidated Financial Statements, Note 10. Fair Value Measurements" and "Notes to Consolidated Financial Statements, Note 11. Marketable Securities."

Item 8. Financial Statements and Supplementary Data

The information required by this item is included in this Annual Report on pages F-1 through F-31.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such terms are defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the Exchange Act). Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Annual Report.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under this framework, our management concluded that our internal control over financial reporting was effective as of September 25, 2022.

PricewaterhouseCoopers LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this Annual Report, has also audited the effectiveness of our internal control over financial reporting as of September 25, 2022, as stated in its report which appears on pages F-1 through F-2 in this Annual Report.

Inherent Limitations over Internal Controls

Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that:

i. pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;

ii. provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

iii. provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the consolidated financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations, including the possibility of human error and circumvention by collusion or overriding of controls. Accordingly, even an effective internal control system may not prevent or detect material misstatements on a timely basis. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the fourth quarter of fiscal 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item regarding directors is incorporated by reference to our 2023 Proxy Statement to be filed with the SEC in connection with our 2023 Annual Meeting of Stockholders (2023 Proxy Statement) in "Proposal 1: Election of Directors" under the heading "Nominees for Election." Certain information required by this item regarding executive officers is set forth in Item 1 of Part I of this Annual Report under the heading "Information about our Executive Officers." The information required by this item regarding corporate governance is incorporated by reference to our 2023 Proxy Statement in the section titled "Corporate Governance" under the headings "Code of Ethics and Corporate Governance Principles and Practices" and "Board Meetings, Committees and Attendance."

Item 11. Executive Compensation

The information required by this item is incorporated by reference to our 2023 Proxy Statement in the section titled "Executive Compensation and Related Information" under the headings "Compensation Discussion and Analysis," "HR and Compensation Committee Report" and "Compensation Tables and Narrative Disclosures," in the section titled "Director Compensation" and in the section titled "Stock Ownership of Certain Beneficial Owners and Management" under the heading "Compensation Committee Interlocks and Insider Participation."

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference to our 2023 Proxy Statement in the section titled "Stock Ownership of Certain Beneficial Owners and Management" and in "Proposal 3" under the heading "Equity Compensation Plan Information."

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to our 2023 Proxy Statement in the section titled "Certain Relationships and Related-Person Transactions" and in the section titled "Corporate Governance" under the headings "Director Independence" and "Board Meetings, Committees and Attendance."

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to our 2023 Proxy Statement in "Proposal 2: Ratification of Selection of Independent Public Accountants."

PART IV

Item 15. Exhibits and Financial Statement Schedules

The following documents are filed as part of this report:

(a) Financial Statements:

Financial statement schedules other than those listed above have been omitted because they are either not required, not applicable or the information is otherwise included in the notes to the consolidated financial statements.

(b) Exhibits

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
2.1	Agreement and Plan of Merger, dated as of January 12, 2021, among Qualcomm Technologies, Inc., Nile Acquisition Corporation and NuVia, Inc. (1)	8-K	1/13/2021	2.1	
2.2	Agreement and Plan of Merger, dated as of October 4, 2021, by and among QUALCOMM Incorporated, SSW HoldCo LP, SSW Merger Sub Corp and Veoneer, Inc. (1)	8-K	10/4/2021	2.1	
3.1	Amended and Restated Certificate of Incorporation.	8-K	4/20/2018	3.1	
3.2	Amended and Restated Bylaws.	8-K	7/23/2021	3.2	
4.1	Indenture, dated May 20, 2015, between the Company and U.S. Bank Trust Company, National Association (as successor in interest to U.S. Bank, National Association), as trustee.	8-K	5/21/2015	4.1	
4.2	Officers' Certificate, dated May 20, 2015, for the Floating Rate Notes due 2018, the Floating Rate Notes due 2020, the 1.400% Notes due 2018, the 2.250% Notes due 2020, the 3.000% Notes due 2022, the 3.450% Notes due 2025, the 4.650% Notes due 2035 and the 4.800% Notes due 2045.	8-K	5/21/2015	4.2	
4.3	Form of 3.450% Notes due 2025.	8-K	5/21/2015	4.8	
4.4	Form of 4.650% Notes due 2035.	8-K	5/21/2015	4.9	
4.5	Form of 4.800% Notes due 2045.	8-K	5/21/2015	4.10	
4.6	Officers' Certificate, dated May 26, 2017, for the Floating Rate Notes due 2019, the Floating Rate Notes due 2020, the Floating Rate Notes due 2023, the 1.850% Notes due 2019, the 2.100% Notes due 2020, the 2.600% Notes due 2023, the 2.900% Notes due 2024, the 3.250% Notes due 2027 and the 4.300% Notes due 2047.	8-K	5/31/2017	4.2	
4.7	Form of Floating Rate Notes due 2023.	8-K	5/31/2017	4.5	
4.8	Form of 2.600% Notes due 2023.	8-K	5/31/2017	4.8	
4.9	Form of 2.900% Notes due 2024.	8-K	5/31/2017	4.9	
4.10	Form of 3.250% Notes due 2027.	8-K	5/31/2017	4.10	
4.11	Form of 4.300% Notes due 2047.	8-K	5/31/2017	4.11	
4.12	Officers' Certificate, dated May 8, 2020, for the 2.150% Notes due 2030 and the 3.250% Notes due 2050.	8-K	5/11/2020	4.2	
4.13	Form of 2.150% Notes due 2030.	8-K	5/11/2020	4.3	
4.14	Form of 3.250% Notes due 2050.	8-K	5/11/2020	4.4	
4.15	Officers' Certificate, dated August 14, 2020, for the 1.300% Notes due 2028 and the 1.650% Notes due 2032.	8-K	8/18/2020	4.2	
4.16	Form of 1.300% Rule 144A Global Notes due 2028.	8-K	8/18/2020	4.3	
4.17	Form of 1.650% Rule 144A Global Notes due 2032.	8-K	8/18/2020	4.5	
4.18	Officers' Certificate, dated January 6, 2021, for the 1.300% Notes due 2028 and the 1.650% Notes due 2032.	10-Q	2/3/2021	4.23	
4.19	Form of 1.300% Notes due 2028.	10-Q	2/3/2021	4.24	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
4.20	Form of 1.650% Notes due 2032.	10-Q	2/3/2021	4.25	
4.21	Officers' Certificate, dated May 9, 2022, for the 4.250% Notes due 2032 and the 4.500% Notes due 2052.	8-K	5/9/2022	4.2	
4.22	Form of 4.250% Notes due 2032.	8-K	5/9/2022	4.3	
4.23	Form of 4.500% Notes due 2052.	8-K	5/9/2022	4.4	
4.24	Description of registrant's securities.	10-K	11/6/2019	4.15	
10.1	Credit Agreement, dated as of December 8, 2020, among QUALCOMM Incorporated, the lenders party thereto, the letter of credit issuers party thereto and Bank of America, N.A., as administrative agent, swing line lender and a letter of credit issuer.	8-K	12/10/2020	10.1	
10.2	LIBOR Transition Amendment to Credit Agreement, dated as of December 21, 2021, by and between QUALCOMM Incorporated and Bank of America, N.A., as administrative agent.	10-Q	2/2/2022	10.25	
10.3	Investment and Separation Matters Agreement, dated as of October 4, 2021, by and among QUALCOMM Incorporated, SSW HoldCo LP and SSW Merger Sub Corp. (1)	8-K	10/4/2021	10.1	
10.4	Letter Agreement, dated as of January 24, 2022, by and among QUALCOMM Incorporated, SSW HoldCo LP and SSW Merger Sub Corp and SSW Investors LP. (1)	10-Q	4/27/2022	10.27	
10.5	Form of Indemnity Agreement between the Company and its directors and officers. (2)	10-K	11/4/2015	10.1	
10.6	Amended and Restated 2016 Long-Term Incentive Plan. (2)	10-Q	4/29/2020	10.7	
10.7	Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan, as amended. (2)	10-Q	4/25/2018	10.62	
10.8	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award RTSR Shares Grant Notice and ROIC Shares Grant Notice, and Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Agreement (September 30, 2019 - September 25, 2022 Performance Period). (2)	10-K	11/6/2019	10.29	
10.9	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement (2020 Form). (2)	10-K	11/4/2020	10.21	
10.10	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement (2020 Form). (2)	10-Q	2/3/2021	10.20	
10.11	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notices and Executive Performance Stock Unit Award Agreement (2021 Form). (2)	10-K	11/3/2021	10.22	
10.12	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Restricted Stock Unit Award Grant Notice and Executive Restricted Stock Unit Award Agreement (2021 Form). (2)	10-K	11/3/2021	10.23	
10.13	Form of 2022 Annual Cash Incentive Plan Performance Unit Agreement (2)	10-Q	2/2/2022	10.26	
10.14	Qualcomm Incorporated Executive Officer Change in Control Severance Plan (as amended and restated). (2)	10-Q	7/28/2021	10.11	
10.15	Qualcomm Incorporated Executive Officer Severance Plan (as amended and restated). (2)	10-Q	7/28/2021	10.12	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.16	Qualcomm Incorporated Non-Executive Officer Change in Control Severance Plan (as amended and restated).	10-Q	7/28/2021	10.7	
10.17	QUALCOMM Incorporated Non-Qualified Deferred Compensation Plan, as amended and restated effective January 1, 2021. (2)	10-Q	2/3/2021	10.16	
10.18	Qualcomm Incorporated 2022 Director Compensation Plan. (2)	10-K	11/3/2021	10.24	
10.19	Qualcomm Incorporated 2023 Director Compensation Plan. (2)				X
10.20	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in the United States (2016 Form). (2)	10-Q	4/20/2016	10.32	
10.21	Forms of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for Non-Employee Directors in Hong Kong. (2)	10-Q	4/28/21	10.4	
10.22	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement (2018 Form). (2)	10-Q	4/25/2018	10.60	
21	Subsidiaries of the Company.				X
23.1	Consent of Independent Registered Public Accounting Firm.				X
31.1	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Cristiano R. Amon.				X
31.2	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Akash Palkhiwala.				X
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Cristiano R. Amon.				X
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Akash Palkhiwala.				X
101.INS	Inline XBRL Instance Document.				X
101.SCH	Inline XBRL Taxonomy Extension Schema.				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase.				X
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase.				X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase.				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase.				X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).				

(1) We shall furnish supplementally a copy of any omitted schedule to the Commission upon request.

(2) Indicates management contract or compensatory plan or arrangement required to be identified pursuant to Item 15(a).

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

QUALCOMM Incorporated

November 2, 2022	By	/s/ Cristiano R. Amon
		Cristiano R. Amon
		President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Cristiano R. Amon Cristiano R. Amon	President and Chief Executive Officer, and Director (Principal Executive Officer)	November 2, 2022
/s/ Akash Palkhiwala Akash Palkhiwala	Chief Financial Officer (Principal Financial Officer)	November 2, 2022
/s/ Erin Polek Erin Polek	Senior Vice President, Corporate Controller and Chief Accounting Officer (Principal Accounting Officer)	November 2, 2022
/s/ Sylvia Acevedo Sylvia Acevedo	Director	November 2, 2022
/s/ Mark Fields Mark Fields	Director	November 2, 2022
/s/ Jeffrey W. Henderson Jeffrey W. Henderson	Director	November 2, 2022
/s/ Gregory N. Johnson Gregory N. Johnson	Director	November 2, 2022
/s/ Ann M. Livermore Ann M. Livermore	Director	November 2, 2022
/s/ Mark D. McLaughlin Mark D. McLaughlin	Chair of the Board	November 2, 2022
/s/ Jamie S. Miller Jamie S. Miller	Director	November 2, 2022
/s/ Irene B. Rosenfeld Irene B. Rosenfeld	Director	November 2, 2022
/s/ Kornelis (Neil) Smit Kornelis (Neil) Smit	Director	November 2, 2022
/s/ Jean-Pascal Tricoire Jean-Pascal Tricoire	Director	November 2, 2022
/s/ Anthony J. Vinciquerra Anthony J. Vinciquerra	Director	November 2, 2022

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of QUALCOMM Incorporated

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of QUALCOMM Incorporated and its subsidiaries (the "Company") as of September 25, 2022 and September 26, 2021, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended September 25, 2022, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of September 25, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 25, 2022 and September 26, 2021, and the results of its operations and its cash flows for each of the three years in the period ended September 25, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 25, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition – Qualcomm CDMA Technologies (QCT) Customer Incentive Arrangements

As described in Notes 1 and 2 to the consolidated financial statements, the Company's QCT segment, which recorded revenues of $37.7 billion in fiscal 2022, records reductions to revenues for customer incentive arrangements, including volume-related and other pricing rebates and cost reimbursements for marketing and other activities involving certain products and technologies, in the period that the related revenues are earned. For certain QCT customer incentive arrangements, there is complexity in applying certain contractual terms to determine the amount recorded as a reduction to revenues. The amounts accrued for customer incentive arrangements are recorded as a reduction to accounts receivable, net or as other current liabilities based on whether the Company has the intent and contractual right of offset. Certain amounts recorded as a reduction to revenues for customer incentive arrangements are considered variable consideration and are included in the transaction price primarily based on estimating the most likely amount expected to be provided to the customer.

The principal considerations for our determination that performing procedures relating to revenue recognition of QCT customer incentive arrangements is a critical audit matter are the significant audit effort in performing procedures and evaluating audit evidence obtained related to the completeness and accuracy of reductions to QCT revenues recognized.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's review of and accounting for QCT customer incentive arrangements as well as controls relating to management's review over the completeness and accuracy of reductions to revenues in fiscal 2022 and accruals for customer incentive arrangements as of the balance sheet date. These procedures also included, among others, testing the completeness and accuracy of reductions to revenues and accruals for QCT customer incentive arrangements recorded in the consolidated financial statements, and recalculating, on a test basis, reductions to revenues and accruals for QCT customer incentive arrangements based upon customer-specific contractual terms.

/s/ PricewaterhouseCoopers LLP

San Diego, California
November 2, 2022

We have served as the Company's auditor since 1985.

QUALCOMM Incorporated
CONSOLIDATED BALANCE SHEETS
(In millions, except par value amounts)

	September 25, 2022	September 26, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 2,773	$ 7,116
Marketable securities	3,609	5,298
Accounts receivable, net	5,643	3,579
Inventories	6,341	3,228
Held for sale assets	733	—
Other current assets	1,625	854
Total current assets	20,724	20,075
Deferred tax assets	1,803	1,591
Property, plant and equipment, net	5,168	4,559
Goodwill	10,508	7,246
Other intangible assets, net	1,882	1,458
Held for sale assets	1,200	—
Other assets	7,729	6,311
Total assets	$ 49,014	$ 41,240
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Trade accounts payable	$ 3,796	$ 2,750
Payroll and other benefits related liabilities	1,486	1,531
Unearned revenues	369	612
Short-term debt	1,945	2,044
Held for sale liabilities	581	—
Other current liabilities	3,689	5,014
Total current liabilities	11,866	11,951
Unearned revenues	144	364
Income taxes payable	1,472	1,713
Long-term debt	13,537	13,701
Held for sale liabilities	119	—
Other liabilities	3,863	3,561
Total liabilities	31,001	31,290
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; 8 shares authorized; none outstanding	—	—
Common stock and paid-in capital, $0.0001 par value; 6,000 shares authorized; 1,121 and 1,125 shares issued and outstanding, respectively	195	—
Retained earnings	17,840	9,822
Accumulated other comprehensive (loss) income	(22)	128
Total stockholders' equity	18,013	9,950
Total liabilities and stockholders' equity	$ 49,014	$ 41,240

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF OPERATIONS
(In millions, except per share data)

	Year Ended		
	September 25, 2022	**September 26, 2021**	**September 27, 2020**
Revenues:			
Equipment and services	$ 37,171	$ 26,741	$ 16,298
Licensing	7,029	6,825	7,233
Total revenues	44,200	33,566	23,531
Costs and expenses:			
Cost of revenues	18,635	14,262	9,255
Research and development	8,194	7,176	5,975
Selling, general and administrative	2,570	2,339	2,074
Other (Note 2)	(1,059)	—	(28)
Total costs and expenses	28,340	23,777	17,276
Operating income	15,860	9,789	6,255
Interest expense	(490)	(559)	(602)
Investment and other (expense) income, net	(372)	1,044	66
Income from continuing operations before income taxes	14,998	10,274	5,719
Income tax expense	(2,012)	(1,231)	(521)
Income from continuing operations	12,986	9,043	5,198
Discontinued operations, net of income taxes (Note 9)	(50)	—	—
Net income	$ 12,936	$ 9,043	$ 5,198
Basic earnings (loss) per share:			
Continuing operations	$ 11.56	$ 7.99	$ 4.58
Discontinued operations	(0.04)	—	—
Net income	$ 11.52	$ 7.99	$ 4.58
Diluted earnings (loss) per share:			
Continuing operations	$ 11.41	$ 7.87	$ 4.52
Discontinued operations	(0.04)	—	—
Net income	$ 11.37	$ 7.87	$ 4.52
Shares used in per share calculations:			
Basic	1,123	1,131	1,135
Diluted	1,137	1,149	1,149

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In millions)

	Year Ended		
	September 25, 2022	**September 26, 2021**	**September 27, 2020**
Net income	$ 12,936	$ 9,043	$ 5,198
Other comprehensive (loss) income, net of income taxes:			
Foreign currency translation (losses) gains	(433)	40	60
Net unrealized (losses) gains on certain available-for-sale securities	(113)	(5)	22
Net unrealized gains (losses) on derivative instruments	361	(53)	29
Other gains (losses)	35	(2)	7
Other reclassifications included in net income	—	(59)	(11)
Total other comprehensive (loss) income	(150)	(79)	107
Comprehensive income	$ 12,786	$ 8,964	$ 5,305

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions)

	Year Ended		
	September 25, 2022	**September 26, 2021**	**September 27, 2020**
Operating Activities:			
Net income from continuing operations	$ 12,986	$ 9,043	$ 5,198
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization expense	1,762	1,582	1,393
Income tax provision less than income tax payments	(138)	(245)	(309)
Share-based compensation expense	2,031	1,663	1,212
Net losses (gains) on marketable securities and other investments	432	(1,002)	(336)
Impairment losses on marketable securities and other investments	47	33	405
Other items, net	(54)	(77)	(142)
Changes in assets and liabilities:			
Accounts receivable, net	(2,066)	426	(1,529)
Inventories	(3,137)	(622)	(1,157)
Other assets	(2,266)	(1,649)	(110)
Trade accounts payable	1,036	495	907
Payroll, benefits and other liabilities	(1,043)	1,091	528
Unearned revenues	(324)	(202)	(246)
Net cash used by operating activities from discontinued operations	(170)	—	—
Net cash provided by operating activities	9,096	10,536	5,814
Investing Activities:			
Capital expenditures	(2,262)	(1,888)	(1,407)
Purchases of debt and equity marketable securities	(1,414)	(5,907)	(6,213)
Proceeds from sales and maturities of debt and equity marketable securities	2,622	5,555	2,399
Acquisitions and other investments, net of cash acquired	(4,912)	(1,377)	(185)
Proceeds from other investments	132	320	100
Other items, net	30	(59)	43
Net cash used by investing activities	(5,804)	(3,356)	(5,263)
Financing Activities:			
Proceeds from short-term debt	7,000	2,886	2,848
Repayment of short-term debt	(7,003)	(2,885)	(2,846)
Repayment of debt of acquired company	(349)	—	—
Proceeds from long-term debt	1,477	—	1,988
Repayment of long-term debt	(1,540)	—	(2,219)
Proceeds from issuance of common stock	356	347	329
Repurchases and retirements of common stock	(3,129)	(3,366)	(2,450)
Dividends paid	(3,212)	(3,008)	(2,882)
Payments of tax withholdings related to vesting of share-based awards	(766)	(737)	(347)
Other items, net	(30)	(35)	(128)
Net cash used by financing activities	(7,196)	(6,798)	(5,707)
Effect of exchange rate changes on cash and cash equivalents	(113)	27	24
Net (decrease) increase in total cash and cash equivalents	(4,017)	409	(5,132)
Total cash and cash equivalents at beginning of period	7,116	6,707	11,839
Total cash and cash equivalents at end of period (including $326 million classified as held for sale at September 25, 2022)	$ 3,099	$ 7,116	$ 6,707

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions, except per share data)

	Year Ended		
	September 25, 2022	**September 26, 2021**	**September 27, 2020**
Total stockholders' equity, beginning balance	$ 9,950	$ 6,077	$ 4,909
Common stock and paid-in capital:			
Balance at beginning of period	—	586	343
Common stock issued under employee benefit plans	356	345	331
Repurchases and retirements of common stock	(1,514)	(1,958)	(1,042)
Share-based compensation	2,119	1,754	1,301
Tax withholdings related to vesting of share-based payments	(766)	(737)	(347)
Stock awards assumed in acquisition	—	10	—
Balance at end of period	195	—	586
Retained earnings:			
Balance at beginning of period	9,822	5,284	4,466
Net income	12,936	9,043	5,198
Repurchases and retirements of common stock	(1,615)	(1,408)	(1,408)
Dividends	(3,303)	(3,097)	(2,972)
Balance at end of period	17,840	9,822	5,284
Accumulated other comprehensive (loss) income:			
Balance at beginning of period	128	207	100
Other comprehensive (loss) income	(150)	(79)	107
Balance at end of period	(22)	128	207
Total stockholders' equity, ending balance	$ 18,013	$ 9,950	$ 6,077
Dividends per share announced	$ 2.86	$ 2.66	$ 2.54

See accompanying notes.

Note 1. Significant Accounting Policies

We are a global leader in the development and commercialization of foundational technologies for the wireless industry. Our technologies and products are used in mobile devices and other wireless products, including those used in the internet of things (IoT) and automotive systems for connectivity, digital cockpit and advanced driver assistance and automated driving (ADAS/AD). We derive revenues principally from sales of integrated circuit products and through the licensing of our intellectual property, including patents and other rights.

Principles of Consolidation. The consolidated financial statements include the assets, liabilities and operating results of Qualcomm, its subsidiaries and any variable interest entities for which we are deemed to be the primary beneficiary (Note 9). Intercompany transactions and balances have been eliminated.

Financial Statement Preparation. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts and the disclosure of contingent amounts in our consolidated financial statements and the accompanying notes. Examples of our significant accounting estimates and policies that may involve a higher degree of judgment and complexity than others include: the estimation of sales-based royalty revenues; the impairment of non-marketable equity investments; the valuation of inventories; the impairment of goodwill, other indefinite-lived assets and long-lived assets; the recognition, measurement and disclosure of loss contingencies related to legal and regulatory proceedings; and the calculation of our income tax provision, including the recognition and measurement of uncertain tax positions. Actual results could differ from those estimates. Certain prior year amounts have been reclassified to conform to the current year presentation.

Fiscal Year. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. The fiscal years presented each included 52 weeks.

Cash Equivalents. We consider all highly liquid investments with original maturities of 90 days or less to be cash equivalents. Cash equivalents may be comprised of money market funds, certificates of deposit, commercial paper, corporate bonds and notes, certain bank time and demand deposits and government agencies' securities. The carrying amounts approximate fair value due to the short maturities of these instruments.

Marketable Securities. Marketable securities include marketable equity securities, available-for-sale debt securities and, from time-to-time, certain time deposits. We classify marketable securities as current or noncurrent based on the nature of the securities and their availability for use in current operations. Marketable securities are stated at fair value with all realized and unrealized gains and losses on investments in marketable equity securities and realized gains and losses on available-for-sale debt securities recognized in investment and other income (expense), net. Debt securities are classified as available for sale or held to maturity at the time of purchase and reevaluated at each balance sheet date. The realized and unrealized gains and losses on marketable securities are determined using the specific identification method.

If a debt security has an unrealized loss and we either intend to sell the security or it is more likely than not that we will be required to sell the security before its anticipated recovery, we record an impairment charge to investment and other income (expense), net for the entire amount of the unrealized loss and adjust the amortized cost basis of the security. For the remaining debt securities, if an unrealized loss exists, we separate the impairment into the portion of the loss related to credit factors and the portion of the loss that is not related to credit factors. Unrealized gains or unrealized losses that are not related to credit factors on available-for-sale debt securities are recorded as a component of accumulated other comprehensive income (loss), net of income taxes. Unrealized losses that are related to credit loss factors on available-for-sale debt securities and subsequent adjustments to the credit loss are recorded as an allowance for credit losses, which is included in investment and other income (expense), net. In evaluating whether a credit loss exists, we consider a variety of factors, including the significance of the decline in value as compared to the cost basis; underlying factors contributing to a decline in the prices of securities in a single asset class; the security's relative performance versus its peers, sector or asset class; the market and economy in general; views of external investment managers; news or financial information that has been released specific to the investee; and the outlook for the overall industry in which the investee operates.

Equity Method and Non-marketable Equity Investments. Equity investments for which we have significant influence, but not control, over the investee and are not the primary beneficiary of the investee's activities are accounted for under the equity method. Our share of gains and losses in equity method investments are recorded in investment and other income (expense), net. We eliminate unrealized profit or loss related to transactions with equity method investees in relation to our ownership interest in the investee, which is recorded as a component of equity in net earnings (losses) in investees in investment and other income (expense), net. Non-marketable equity investments (for which we do not have significant influence or control) are investments without readily determinable fair values that are recorded based on initial cost minus impairment, if any, plus or minus adjustments resulting from observable price changes in orderly transactions for identical or similar securities, if any. All gains and losses on investments in non-marketable equity securities, realized and unrealized, are recognized in investment and other income (expense), net. We monitor equity method and non-marketable equity investments for events or circumstances that could indicate the investments are impaired, such as a deterioration in the investee's financial condition and business forecasts and lower valuations in recently completed or anticipated financings, and recognize a charge to investment and other income (expense), net for the difference between the estimated fair value and the carrying value. For equity method investments, we record impairment losses in earnings only when impairments are considered other-than-temporary.

Derivatives. Our primary objectives for holding derivative instruments are to manage foreign exchange risk for certain foreign currency revenues, operating expenses, receivables and payables and to manage interest rate risk associated with our cash equivalents, marketable securities and long-term debt. Derivative instruments are recorded at fair value and included in other current or noncurrent assets or liabilities based on their maturity dates. Counterparties to these derivative instruments are all major banking institutions. At September 25, 2022, the aggregate fair value of our derivative instruments recorded in total assets and in total liabilities were $271 million and $346 million, respectively. At September 26, 2021, the aggregate fair value of our derivative instruments recorded in total assets and in total liabilities were $42 million and $111 million, respectively.

Foreign Currency Hedges: We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative instruments, including foreign currency forward and option contracts with financial counterparties, that may or may not be designated as hedging instruments. At September 25, 2022 and September 26, 2021, these derivative instruments had maturity dates between one and 21 months. Gains and losses arising from such contracts that are designated as cash flow hedging instruments are recorded as a component of accumulated other comprehensive income (loss) as gains and losses on derivative instruments, net of income taxes. The hedging gains and losses in accumulated other comprehensive income (loss) are subsequently reclassified to revenues or costs and expenses, as applicable, in the consolidated statements of operations in the same period in which the underlying transactions affect our earnings. The cash flows associated with derivative instruments designated as cash flow hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction.

For foreign currency forward contracts not designated as hedging instruments, the changes in fair value are recorded in investment and other income (expense), net in the period of change. The cash flows associated with such derivative instruments not designated as hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction.

Interest Rate Swaps: From time to time, we enter into interest rate swap agreements that allow us to effectively convert fixed-rate payments into floating-rate payments on portions of our outstanding long-term debt. We enter into these agreements, in part, to manage interest rate risk associated with our cash equivalents and marketable securities, in addition to changes in the fair value of our outstanding debt. These transactions are designated as fair value hedges, and the gains and losses related to changes in the fair value of the interest rate swaps substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to changes in the market interest rates. The net gains and losses on the interest rate swaps, as well as the offsetting gains or losses on the related fixed-rate debt attributable to the hedged risks, are recognized as interest expense in the current period. The interest settlement payments associated with the interest rate swap agreements are classified as cash flows from operating activities in the consolidated statements of cash flows.

During fiscal 2021, we entered into forward-starting interest rate swaps to hedge the variability of forecasted interest payments on certain anticipated debt issuances. These have been designated as cash flow hedges of forecasted transactions. The gains and losses arising from such contracts are recorded as a component in accumulated other comprehensive income (loss) as gains and losses on derivative instruments. When the anticipated debt issuances are completed, the hedging gains and losses in accumulated other comprehensive income (loss) are reclassified as interest expense over the terms of the related debt issued.

Gross Notional Amounts: The gross notional amounts of our foreign currency and interest rate derivatives by instrument type were as follows (in millions):

	September 25, 2022	September 26, 2021
Forwards	$ 3,176	$ 2,449
Options	881	870
Swaps	3,650	2,600
	$ 7,707	$ 5,919

The gross notional amounts of our derivatives by currency were as follows (in millions):

	September 25, 2022	September 26, 2021
British pound sterling	$ 172	$ 83
Chinese renminbi	1,920	1,627
Euro	206	—
Indian rupee	1,657	1,262
Japanese yen	8	27
United States dollar	3,744	2,920
	$ 7,707	$ 5,919

Other Hedging Activities. At September 25, 2022 and September 26, 2021, we designated $235 million and $1.5 billion, respectively, of foreign currency-denominated liabilities, excluding accrued interest, related to the fine(s) imposed by the European Commission as hedges of our net investment in certain foreign subsidiary(ies). Gains and losses arising from the portion of these balances that are designated as net investment hedges are recorded as a component of accumulated other comprehensive income (loss) as foreign currency translation adjustments. During fiscal 2022, we discontinued the net investment hedge related to one of the fines previously recorded related to the European Commission (EC) Investigation (Note 7). The associated foreign currency gains related to this fine previously recorded will remain in accumulated other comprehensive income (loss) until the foreign subsidiaries are sold or substantially liquidated, at which point it will be reclassified into earnings.

Fair Value Measurements. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants as of the measurement date. Applicable accounting guidance provides an established hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs that market participants would use in valuing the asset or liability and are developed based on market data obtained from sources independent of us. Unobservable inputs are inputs that reflect our assumptions about the factors that market participants would use in valuing the asset or liability. There are three levels of inputs that may be used to measure fair value:

- Level 1 includes financial instruments for which quoted market prices for identical instruments are available in active markets.
- Level 2 includes financial instruments for which there are inputs other than quoted prices included within Level 1 that are observable for the instrument.
- Level 3 includes financial instruments for which fair value is derived from valuation techniques in which one or more significant inputs are unobservable, including our own assumptions.

Assets and liabilities measured at fair value are classified based on the lowest level of input that is significant to the fair value measurement. We review the fair value hierarchy classification on a quarterly basis. Changes in the observability of valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy. We recognize transfers into and out of levels within the fair value hierarchy at the end of the fiscal month in which the actual event or change in circumstances that caused the transfer to occur.

Cash Equivalents and Marketable Securities: We obtain pricing information from quoted market prices, pricing vendors or quotes from brokers/dealers. We conduct reviews of our primary pricing vendors to determine whether the inputs used in the vendor’s pricing processes are deemed to be observable. Contractual sale restrictions are not considered in measuring the fair value of marketable equity securities. The fair value for interest-bearing securities includes accrued interest. The fair value of U.S. Treasury securities and government-related securities, corporate bonds and notes and common stock is generally determined using standard observable inputs, including reported trades, quoted market prices, matrix pricing, benchmark yields, broker/dealer quotes, issuer spreads, two-sided markets and/or benchmark securities. The fair value of mortgage- and asset-backed securities is derived from the use of matrix pricing (prices for similar securities) or, in some cases, cash flow pricing models with observable inputs, such as contractual terms, maturity, credit rating and/or securitization structure to determine the timing and amount of future cash flows.

Derivative Instruments: Derivative instruments that are traded on an exchange are valued using quoted market prices and are included in Level 1. Derivative instruments that are not traded on an exchange are valued using conventional calculations/models that are primarily based on observable inputs, such as foreign currency exchange rates, volatilities and interest rates, and therefore, such derivative instruments are included in Level 2.

Other Investments and Other Liabilities: Other investments and other liabilities included in Level 1 are comprised of our deferred compensation plan liabilities and related assets, which consist of mutual funds and are included in other current assets and other assets. Gains and losses on the revaluation of our deferred compensation plan assets are recorded in investment and other income (expense), net. Corresponding offsetting amounts related to the revaluation of our deferred compensation plan liabilities are included in operating expenses. Other investments included in Level 3 are comprised of contingently issuable equity instruments and warrants issued in connection with certain mergers and initial public offerings of our non-marketable equity investees and convertible debt instruments issued by private companies. The inputs we use to estimate the fair values of these instruments are generally unobservable, and therefore, they are included in Level 3.

Nonrecurring Fair Value Measurements: We measure certain assets and liabilities at fair value on a nonrecurring basis. These assets and liabilities include equity method and non-marketable equity investments, assets acquired and liabilities assumed in an acquisition or in a nonmonetary exchange, and property, plant and equipment and intangible assets that are written down to fair value when they are held for sale or determined to be impaired, all of which are generally measured based on unobservable inputs using an income or market approach.

Inventories. Inventories are valued at the lower of cost and net realizable value using the first-in, first-out method. Recoverability of inventories is assessed based on review of future customer demand that considers multiple factors, including committed purchase orders from customers as well as purchase commitment projections provided by customers and our own forecasts of customer demand, among other factors. This valuation also requires us to make judgments and assumptions based on information currently available about market conditions, including competition, anticipated technological changes, internal product life cycle and development plans, product pricing and other broader market conditions that may impact customer demand, such as the impact of certain capacity constraints experienced across the semiconductor industry through the third quarter of fiscal 2022 and in fiscal 2021, as well as the impact of the macroeconomic environment in fiscal 2022. We generally place binding purchase orders with our suppliers in advance of receiving contractually binding forecasts and/or purchase orders from our customers. The time period between placing purchase orders with our suppliers and receiving contractually binding forecasts and/or purchase orders from our customers has increased and may continue to increase as a result of extended manufacturing lead-times, driven in part by a continued transition to leading-edge technologies and/or increased complexity in the manufacturing process of our products. If we overestimate demand for our products, the amount of our loss will be impacted by our contractual ability to reduce inventory purchases from our suppliers. Our manufacturing relationships generally allow for cancellation of outstanding purchase commitments, but in some cases may require incremental fees and/or the loss of amounts paid in advance related to capacity underutilization. Further, if our customers cancel purchase orders or alter forecasts this may result in excess inventory on hand. Our assumptions of future product demand are inherently uncertain, and changes in our estimates and assumptions may cause us to record additional write-downs in the future if demand forecasted for specific products is greater than actual demand.

Property, Plant and Equipment. Property, plant and equipment are recorded at cost and depreciated or amortized using the straight-line method over their estimated useful lives. Upon the retirement or disposition of property, plant and equipment, the related cost and accumulated depreciation or amortization are removed, and a gain or loss is recorded, when appropriate. Buildings on owned land are depreciated over 30 years, and building improvements are depreciated over 15 years. Leasehold improvements and buildings on leased land are amortized over the shorter of their estimated useful lives, not to exceed 15 years and 30 years, respectively, or the remaining term of the related lease. Other property, plant and equipment have useful lives ranging from 2 to 15 years. Maintenance, repairs and minor renewals or betterments are charged to expense as incurred.

Operating Leases. Operating lease assets and liabilities are recognized for leases with lease terms greater than 12 months based on the present value of the future lease payments over the lease term at the commencement date. Operating leases are included in other assets, other current liabilities and other liabilities on our consolidated balance sheet. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise such option. We account for substantially all lease and related non-lease components together as a single lease component. Operating lease expense is recognized on a straight-line basis over the lease term.

Goodwill and Other Intangible Assets. Goodwill represents the excess of purchase price over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Acquired intangible assets other than goodwill are amortized over their useful lives unless the lives are determined to be indefinite. For intangible assets purchased in a business combination, the estimated fair values of the assets received are used to establish their recorded values. For intangible assets acquired in a nonmonetary exchange, the estimated fair values of the assets transferred (or the estimated fair values of the assets received, if more clearly evident) are used to establish their recorded values, unless the values of neither the assets received nor the assets transferred are determinable within reasonable limits, in which case the assets received are measured based on the carrying values of the assets transferred. Valuation techniques consistent with the market approach, income approach and/or cost approach are used to measure fair value. An estimate of fair value can be affected by many assumptions that require significant judgment. For example, the income approach generally requires us to use assumptions to estimate future cash flows including those related to total addressable market, pricing and share forecasts, competition, technology obsolescence, future tax rates and discount rates. Our estimate of the fair value of certain assets may differ materially from that determined by others who use different assumptions or utilize different business models and from the future cash flows actually realized.

Impairment of Goodwill, Other Indefinite-Lived Assets and Long-Lived Assets. Goodwill and other indefinite-lived intangible assets are tested annually for impairment in the fourth fiscal quarter, and in interim periods if events or changes in circumstances indicate that the assets may be impaired. If a qualitative assessment is used and we determine that the fair value of a reporting unit or indefinite-lived intangible asset is more likely than not (i.e., a likelihood of more than 50%) less than its carrying amount, a quantitative impairment test will be performed. If goodwill is quantitatively assessed for impairment and a reporting unit's carrying value exceeds its fair value, the difference is recorded as an impairment. Other indefinite-lived intangible assets are quantitatively assessed for impairment, if necessary, by comparing their estimated fair values to their carrying values. If the carrying value exceeds the fair value, the difference is recorded as an impairment. Our judgments regarding the existence of impairment indicators and future cash flows related to goodwill, other indefinite-lived assets and long-lived assets may be based on operational performance of our businesses, market conditions, expected selling price and/or other factors. Although there are inherent uncertainties in this assessment process, the estimates and assumptions we use, including estimates of future cash flows and discount rates, are consistent with our internal planning, when appropriate. If these estimates or their related assumptions change in the future, we may be required to record an impairment charge on a portion or all of such assets. Furthermore, we cannot predict the occurrence of future impairment-triggering events nor the impact such events might have on our reported asset values.

Long-lived assets, such as property, plant and equipment and intangible assets subject to amortization, are reviewed for impairment when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Recoverability of assets to be held and used is measured by comparing the carrying amount of an asset or asset group to estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset or asset group exceeds its estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset or asset group exceeds the estimated fair value of the asset or asset group. Long-lived assets to be disposed of by sale are reported at the lower of their carrying amounts or their estimated fair values less costs to sell and are not depreciated.

Revenue Recognition. We derive revenues principally from sales of integrated circuit products and licensing of our intellectual property. We also generate revenues from licensing system software and by performing development and other services and from other product sales. The timing of revenue recognition and the amount of revenue actually recognized in each case depends upon a variety of factors, including the specific terms of each arrangement and the nature of our performance obligations.

Revenues from sales of our products are recognized upon transfer of control to the customer, which is generally at the time of shipment. Revenues from providing services are typically recognized over time as our performance obligation is satisfied. Revenues from providing services and licensing system software were each less than 5% of total revenues for all periods presented.

We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Licensees pay royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, such as smartphones, tablets, laptops and smartwatches, and provide for a maximum royalty amount payable per device. We estimate and recognize sales-based royalties on such licensed products in the period in which the associated sales occur, considering all relevant information (historical, current and forecasted) that is reasonably available to us. Our estimates of sales-based royalties are based largely on preliminary royalty estimates provided by our licensees and, to a lesser extent, an assessment of the volume of devices supplied into the market that incorporate or use our licensed intellectual property, combined with an estimate of the mix of such sales on a licensee-by-licensee basis, as well as the licensees' average wholesale prices of such products. In the periods presented, we have recognized immaterial differences between preliminary royalty estimates provided to us by licensees and actual amounts reported and paid by licensees, which are generally received the following quarter, as licensees have not completed their royalty reporting process at the time estimates are provided to us, and in certain cases, they do not provide all necessary information in order for us to calculate an estimate of royalties due, which requires us to independently estimate certain information. We also consider in our estimates of sales-based royalties any changes in pricing we plan or expect to make and certain constraints on our ability to estimate such royalties. As a result of recognizing revenues in the period in which the licensees' sales occur using estimates, adjustments to revenues are required in subsequent periods to reflect changes in estimates as new information becomes available, primarily resulting from actual amounts reported by our licensees.

License agreements that require payment of license fees contain a single performance obligation that represents ongoing access to a portfolio of intellectual property over the license term since such agreements provide the licensee the right to access a portfolio of intellectual property that exists at inception of the license agreement and to updates and new intellectual property that is added to the licensed portfolio during the term of the agreement that are highly interdependent or interrelated. Since we expect to expend efforts to develop and transfer updates to our licensed portfolio on an even basis, license fees are recognized as revenues on a straight-line basis over the estimated period of benefit of the license to the licensee.

We account for a contract with a customer/licensee when it is legally enforceable, the parties are committed to perform their respective obligations, the rights of the parties regarding the goods and/or services to be transferred are identified, payment terms are identified, the contract has commercial substance and collectability of substantially all of the consideration is probable, which for product sales, is generally when a customer purchase order is executed and for licensing revenues, is generally upon execution of a license agreement. If all such conditions are not met, revenues and any associated receivables are generally not recognized until such time that the required conditions are met. Cash collected from customers prior to a contract existing is recorded to other customer-related liabilities in other current liabilities.

From time to time, regulatory authorities investigate our business practices, particularly with respect to our licensing business, and institute proceedings against us. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others, the loss of our ability to enforce one or more of our patents; injunctions; monetary damages or fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed original equipment manufacturers (OEMs) or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. Additionally, from time to time, companies initiate various strategies in an attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property, which may include disputing, underreporting, underpaying, not reporting and/or not paying royalties owed to us under their license agreements with us, or reporting to us in a manner that is not in compliance with their contractual obligations. In such cases, we estimate and recognize licensing revenues only when we have a contract, as defined in the revenue recognition guidance, which includes, among other items, evaluating whether our license agreements remain valid and enforceable and evaluating licensees' conduct and whether they remain committed to perform their respective obligations. We also estimate and recognize licensing revenues only to the extent it is probable that a significant reversal of cumulative revenues recognized will not occur, which includes, among other items, determining the expected impact, if any, to revenues of any license agreements that may be renegotiated and/or are newly entered into. We analyze the risk of a significant revenue reversal considering both the likelihood and magnitude of the reversal and, if necessary, constrain the amount of estimated revenues recognized in order to mitigate this risk, which may result in recognizing revenues less than amounts contractually owed to us. These aforementioned estimates may require significant judgment.

We measure revenues (including our estimates of sales-based royalties) based on the amount of consideration we expect to receive in exchange for products or services. We record reductions to revenues for customer incentive arrangements, including volume-related and other pricing rebates and cost reimbursements for marketing and other activities involving certain of our products and technologies, in the period that the related revenues are earned. For certain QCT (Qualcomm CDMA Technologies) customer incentive arrangements, there is complexity in applying certain contractual terms to determine the amount recorded as a reduction to revenues. For the periods presented, no significant reversals of revenues have been made related to such amounts previously recorded. The amounts accrued for customer incentive arrangements are recorded as a reduction to accounts receivable, net or as other current liabilities based on whether we have the intent and contractual right of offset. Certain amounts recorded as a reduction to revenues for customer incentive arrangements are considered variable consideration and are included in the transaction price primarily based on estimating the most likely amount expected to be provided to the customer/licensee.

Adjustments made to revenues in subsequent periods to reflect changes in estimates as new information becomes available are included in our disclosure of revenues recognized from previously satisfied performance obligations (Note 2).

Revenues recognized from sales of our products and sales-based royalties are generally included in accounts receivable, net (including unbilled receivables) based on our unconditional right to payment for satisfied or partially satisfied performance obligations.

Concentrations. A significant portion of our revenues are concentrated with a small number of customers/licensees of our QCT and QTL (Qualcomm Technology Licensing) segments. The comparability of customer/licensee concentrations for the periods presented are impacted by the timing of customer/licensees device launches and/or innovation cycles and other seasonal trends, among other fluctuations in demand. Revenues from each customer/licensee that were 10% or greater of total revenues were as follows:

	September 25, 2022	September 26, 2021	September 27, 2020
Customer/licensee (w)	21 %	14 %	19 %
Customer/licensee (x)	21	23	10
Customer/licensee (y)	*	13	12
Customer/licensee (z)	*	*	10

* Less than 10%

We rely on sole- or limited-source suppliers for some products, particularly products in our QCT segment, subjecting us to possible shortages of raw materials or manufacturing capacity. The loss of a supplier or the inability of a supplier to meet performance or quality specifications or delivery schedules could harm our ability to meet our delivery obligations and/or negatively impact our revenues, business operations and ability to compete for future business.

Share-Based Compensation. Share-based compensation expense for equity-classified awards, principally related to restricted stock units (RSUs), is measured at the grant date, or at the acquisition date for awards assumed in business combinations, based on the estimated fair value of the award and is recognized over the employee's requisite service period. The fair values of RSUs are estimated based on the fair market values of the underlying stock on the dates of grant or dates the RSUs are assumed. Share-based compensation expense is adjusted to exclude amounts related to share-based awards that are expected to be forfeited.

Legal and Regulatory Proceedings. We are currently involved in certain legal and regulatory proceedings. Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Investigations by antitrust and trade regulation agencies are not conducted in a consistent manner across jurisdictions. Further, each country and agency has different sets of laws, rules and regulations, both substantive and procedural, as well as different legal principles, theories and potential remedies, and some agencies may seek to use the investigation to advance domestic policy goals. Depending on the jurisdiction, these investigations can involve non-transparent procedures under which we may not receive access to evidence relied upon by the enforcement agency or that may be exculpatory and may not be informed of the specific legal theories or evidence considered or relied upon by the agency. Unlike in civil litigation in the United States, in foreign proceedings, we may not be entitled to discovery or depositions, allowed to cross-examine witnesses or confront our accusers. As a result, we may not be aware of, and may not be entitled to know, all allegations against us, or the information or documents provided to, or discovered or prepared by, the agency. Accordingly, we may have little or no idea what an agency's intent is with respect to liability, penalties or the timing of a decision. In many cases the agencies are given significant discretion, and any available precedent may have limited, if any, predictive value in their jurisdictions or other jurisdictions. Accordingly, we cannot predict the outcome of these matters. A broad range of remedies with respect to our business practices that are deemed to violate applicable laws are potentially available. These remedies may include, among others, injunctions, monetary damages or fines or other orders to pay money and the issuance of orders to cease certain conduct and/or to modify our business practices.

If there is at least a reasonable possibility that a material loss may have been incurred associated with pending legal and regulatory proceedings, we disclose such fact, and if reasonably estimable, we provide an estimate of the possible loss or range of possible loss. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of loss can be reasonably estimated with no best estimate in the range, we record the minimum estimated liability. As additional information becomes available, we assess the potential liability related to pending legal and regulatory proceedings and revise our estimates and update our disclosures accordingly. Significant judgment is required in both the determination of probability and the determination as to whether a loss is reasonably estimable. Our legal costs associated with defending ourself are recorded to expense as incurred.

Foreign Currency. Certain foreign subsidiaries use a local currency as the functional currency. Resulting translation gains or losses are recorded as a component of accumulated other comprehensive income (loss). Transaction gains or losses related to balances denominated in a currency other than the functional currency of the entity involved are recognized in the consolidated statements of operations.

Income Taxes. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. We record a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. We include interest and penalties related to income taxes, including unrecognized tax benefits, within income tax expense. We classify all deferred tax assets and liabilities as noncurrent in the consolidated balance sheets. We recognize excess tax benefits and shortfall tax detriments associated with share-based awards in the consolidated statements of operations, as a component of income tax expense, when realized.

Our income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service (IRS) and other tax authorities. In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. While we believe we have appropriate support for the positions taken on our tax returns, we regularly assess the potential outcomes of examinations by tax authorities in determining the adequacy of our provision for income taxes. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known.

We are subject to income taxes in the United States and numerous foreign jurisdictions, and the assessment of our income tax positions involves dealing with uncertainties in the application of complex tax laws and regulations in various taxing jurisdictions. In addition, the application of tax laws and regulations is subject to legal and factual interpretation, judgment and uncertainty. Tax laws and regulations themselves are subject to change as a result of changes in fiscal policy, changes in legislation, the evolution of regulations and court rulings. Significant judgments and estimates are required in determining our provision for income taxes, including those related to special deductions such as FDII (foreign-derived intangible income), tax incentives, intercompany research and development cost-sharing arrangements, transfer pricing, tax credits and the realizability of deferred tax assets. While we believe we have appropriate support for the positions we have taken or that we plan to take on our tax returns, we regularly assess the potential outcomes of examinations by taxing authorities in determining the adequacy of our provision for income taxes. Therefore, the actual liability for U.S. or foreign taxes may be materially different from our estimates, which could result in the need to record additional tax liabilities or potentially reverse previously recorded tax liabilities. For tax years prior to fiscal 2021, we are participating in the IRS Compliance Assurance Process program whereby we endeavor to agree with the IRS on the treatment of all issues prior to filing our federal return.

Stock Repurchases. To reflect share repurchases in the consolidated balance sheet, we (i) reduce common stock for the par value of the shares, (ii) reduce paid-in capital for the amount in excess of par to zero during the quarter in which the shares are repurchased and (iii) record the residual amount, if any, to retained earnings.

In August 2022, the Inflation Reduction Act was enacted in the United States, which included, among other items, a 1% excise tax on certain net stock repurchases after December 31, 2022. Any such excise tax on our stock repurchases will be recorded as a component of stockholders' equity.

Earnings (Loss) Per Share. Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted-average number of common shares outstanding during the reporting period. Diluted earnings per share is computed by dividing net income by the combination of the weighted-average number of dilutive common share equivalents, comprised of shares issuable under our share-based compensation plans and shares subject to accelerated share repurchase programs, if any, and the weighted-average number of common shares outstanding during the reporting period. The following table provides information about the diluted earnings per share calculation (in millions):

	2022	2021	2020
Dilutive common share equivalents included in diluted shares	14	18	14
Shares of common stock equivalents not included because the effect would be anti-dilutive or certain performance conditions were not satisfied at the end of the period	1	—	1

Note 2. Composition of Certain Financial Statement Items

Accounts Receivable (in millions)

	September 25, 2022	September 26, 2021
Trade, net of allowances for doubtful accounts	$ 4,175	$ 2,214
Unbilled	1,435	1,354
Other	33	11
	$ 5,643	$ 3,579

Inventories (in millions)

	September 25, 2022	September 26, 2021
Raw materials	$ 221	$ 267
Work-in-process	3,329	1,475
Finished goods	2,791	1,486
	$ 6,341	$ 3,228

Property, Plant and Equipment (in millions)

	September 25, 2022	September 26, 2021
Land	$ 170	$ 172
Buildings and improvements	1,767	1,642
Computer equipment and software	1,680	1,483
Machinery and equipment	7,349	6,420
Furniture and office equipment	105	94
Leasehold improvements	369	374
Construction in progress	330	269
	11,770	10,454
Less accumulated depreciation and amortization	(6,602)	(5,895)
	$ 5,168	$ 4,559

Depreciation and amortization expense related to property, plant and equipment for fiscal 2022, 2021 and 2020 was $1.3 billion, $1.0 billion and $772 million, respectively.

Goodwill and Other Intangible Assets. We allocate goodwill to our reporting units for impairment testing purposes. The following table presents the goodwill allocated to our segments, as described in Note 8, as well as the changes in the carrying amounts of goodwill during fiscal 2022 and 2021 (in millions):

	QCT	QTL	Total
Balance at September 27, 2020	$ 5,605	$ 718	$ 6,323
Acquisitions	912	5	917
Foreign currency translation adjustments	6	—	6
Balance at September 26, 2021 (1)	6,523	723	7,246
Acquisitions	3,375	12	3,387
Foreign currency translation adjustments	(121)	(4)	(125)
Balance at September 25, 2022 (1)	$ 9,777	$ 731	$ 10,508

(1) Cumulative goodwill impairments were $812 million at both September 25, 2022 and September 26, 2021.

The components of other intangible assets, net were as follows (in millions):

	September 25, 2022			September 26, 2021		
	Gross Carrying Amount	Accumulated Amortization	Weighted-average amortization period (years)	Gross Carrying Amount	Accumulated Amortization	Weighted-average amortization period (years)
Technology-based	$ 5,517	$ (3,669)	12	$ 5,385	$ (3,971)	11
Other	90	(56)	10	93	(49)	10
	$ 5,607	$ (3,725)	10	$ 5,478	$ (4,020)	11

All of these intangible assets are subject to amortization, other than acquired in-process research and development which had a carrying value of $546 million and $247 million at September 25, 2022 and September 26, 2021, respectively. Amortization expense related to these intangible assets was $482 million, $537 million and $621 million for fiscal 2022, 2021 and 2020, respectively. At September 25, 2022, amortization expense related to other intangible assets, including acquired in-process research and development beginning upon the completion of the underlying projects, is expected to be $429 million, $275 million, $245 million, $246 million and $168 million for each of the five years from fiscal 2023 through 2027, respectively, and $519 million thereafter.

Equity Method and Non-marketable Equity Investments. The carrying values of our equity method and non-marketable equity investments are recorded in other assets and were as follows (in millions):

	September 25, 2022	September 26, 2021
Equity method investments	$ 189	$ 214
Non-marketable equity investments	1,105	1,051
	$ 1,294	$ 1,265

Other Current Liabilities (in millions)

	September 25, 2022	September 26, 2021
Customer incentives and other customer-related liabilities	$ 1,879	$ 1,974
Accrual for EC fines (Note 7)	245	1,522
Income taxes payable	634	862
Other	931	656
	$ 3,689	$ 5,014

Revenues. We disaggregate our revenues by segment (Note 8), by product and service (as presented on our consolidated statements of operations), and for our QCT segment, by revenue stream, which is based on the industry and application in which our products are sold (as presented below). In certain cases, the determination of QCT revenues by industry and application requires the use of certain assumptions. Substantially all of QCT's revenues consist of equipment revenues that are recognized at a point in time, and substantially all of QTL's revenues represent licensing revenues that are recognized over time and are principally from royalties generated through our licensees' sales of mobile handsets. QCT revenue streams were as follows (in millions):

	2022	2021	2020
Handsets (1)	$ 25,027	$ 16,830	$ 10,461
RFFE (2)	4,330	4,158	2,362
Automotive (3)	1,372	975	644
IoT (internet of things) (4)	6,948	5,056	3,026
Total QCT revenues	$ 37,677	$ 27,019	$ 16,493

(1) Includes revenues from products sold for use in mobile handsets, excluding RFFE (radio frequency front-end) components.

(2) Includes all revenues from sales of 4G, 5G sub-6 and 5G millimeter wave RFFE products (a substantial portion of which are sold for use in mobile handsets) and excludes radio frequency transceiver components.

(3) Includes revenues from products sold for use in automobiles, including connectivity, digital cockpit and advanced driver assistance and automated driving.

(4) Primarily includes products sold for use in the following industries and applications: consumer (including computing, voice and music and XR), edge networking (including mobile broadband and wireless access points) and industrial (including handhelds, retail, transportation and logistics and utilities).

Revenue recognized from performance obligations satisfied (or partially satisfied) in previous periods were as follows (in millions):

	2022 (1)	2021 (2)	2020 (3)
Revenues recognized from previously satisfied performance obligations	$ 788	$ 283	$ 1,480

(1) Primarily related to certain QCT sales-based royalty revenues related to system software, certain QCT customer incentives and, to a lesser extent, QTL royalty revenues recognized related to devices sold in prior periods (including adjustments to prior period royalty estimates, which includes the impact of the reporting by our licensees of actual royalties due).

(2) Primarily related to certain QCT customer incentives, QTL revenues recognized related to devices sold in prior periods (including adjustments to prior period royalty estimates, which includes the impact of the reporting by our licensees of actual royalties due) and the release of a variable constraint against revenues not previously allocated to our segment results (Note 8).

(3) Primarily related to licensing revenues recognized in the fourth quarter of fiscal 2020 (a portion of which was attributable to fiscal 2020) resulting from the settlement with Huawei and, to a lesser extent, QTL royalties recognized related to devices sold in prior periods (including adjustments to prior period royalty estimates, which includes the impact of the reporting by our licensees of actual royalties due) and certain QCT customer incentives.

Unearned revenues (which are considered contract liabilities) consist primarily of license fees for intellectual property with continuing performance obligations. In fiscal 2022 and fiscal 2021, we recognized revenues of $609 million and $557 million, respectively, that were recorded as unearned revenues at September 26, 2021 and September 27, 2020, respectively.

Remaining performance obligations, substantially all of which are included in unearned revenues, represent the aggregate amount of the transaction price of certain customer contracts yet to be recognized as revenues as of the end of the reporting period and exclude revenues related to (a) contracts that have an original expected duration of one year or less and (b) sales-based royalties (i.e., future royalty revenues) pursuant to our license agreements. Our remaining performance obligations are primarily comprised of certain customer contracts for which QTL received license fees upfront and certain customer contracts for which QCT received upfront fees for licensing system software. At September 25, 2022, we had $690 million of remaining performance obligations, of which $451 million, $173 million, $57 million, $5 million and $1 million is expected to be recognized as revenues for each of the subsequent five years from fiscal 2023 through 2027, respectively, and $3 million expected thereafter.

Share-based Compensation Expense. Total share-based compensation expense, related to all of our share-based awards, was comprised as follows (in millions):

	2022	2021	2020
Cost of revenues	$ 61	$ 47	$ 34
Research and development	1,537	1,234	872
Selling, general and administrative	463	389	306
Share-based compensation expense before income taxes	2,061	1,670	1,212
Related income tax benefit	(489)	(435)	(238)
	$ 1,572	$ 1,235	$ 974

Other Income, Costs and Expenses. In the third quarter of fiscal 2022, the General Court of the European Union issued a ruling annulling a decision made by the EC in fiscal 2018 (Note 7). As a result of the court's decision, we recorded a $1.1 billion benefit to other income in fiscal 2022. Other expenses in fiscal 2020 consisted of $28 million in gains related to a favorable legal settlement.

Investment and Other (Expense) Income, Net (in millions)

	2022	2021	2020
Interest and dividend income	$ 91	$ 83	$ 156
Net (losses) gains on marketable securities	(363)	427	198
Net gains on other investments	113	470	108
Net (losses) gains on deferred compensation plan assets	(141)	130	47
Impairment losses on other investments	(47)	(33)	(405)
Net (losses) gains on derivative instruments	(37)	(14)	8
Equity in net (losses) earnings of investees	(7)	13	(21)
Net gains (losses) on foreign currency transactions	19	(32)	(25)
	$ (372)	$ 1,044	$ 66

In fiscal 2020, in part due to the impact of COVID-19, certain of our investments were impaired and written down to their estimated fair values (a significant portion of which related to the full impairment of our investment in OneWeb, who filed for bankruptcy in the second quarter of fiscal 2020).

Note 3. Income Taxes

The components of the income tax provision from continuing operations were as follows (in millions):

	2022	2021	2020
Current provision:			
Federal	$ 1,114	$ 942	$ 210
State	1	8	1
Foreign (1)	906	518	526
	2,021	1,468	737
Deferred (benefit) provision:			
Federal	(34)	(251)	(192)
State	15	2	2
Foreign (1)	10	12	(26)
	(9)	(237)	(216)
	$ 2,012	$ 1,231	$ 521

(1) The foreign component of the income tax provision included foreign withholding taxes on royalty revenues included in U.S. earnings.

The components of income from continuing operations before income taxes by U.S. and foreign jurisdictions were as follows (in millions):

	2022	2021	2020
United States	$ 12,537	$ 8,781	$ 5,004
Foreign	2,461	1,493	715
	$ 14,998	$ 10,274	$ 5,719

The following is a reconciliation of the expected statutory federal income tax provision to our actual income tax provision from continuing operations (in millions, except percentages). Substantially all of our income from continuing operations is in the U.S., of which a significant portion qualifies for preferential treatment as FDII at a 13% effective tax rate.

	2022	2021	2020
Expected income tax provision at federal statutory tax rate	$ 3,150	$ 2,158	$ 1,201
Benefit from FDII deduction	(753)	(550)	(381)
Excess tax benefit associated with share-based awards	(257)	(265)	(83)
Foreign currency losses (gains) related to Korean withholding tax receivable	243	12	(37)
Nontaxable reversal of 2018 EC fine	(224)	—	—
Benefit related to research and development tax credits	(224)	(195)	(125)
Other	77	71	(54)
	$ 2,012	$ 1,231	$ 521
Effective tax rate	13 %	12 %	9 %

Beginning in fiscal 2019, as a result of certain court rulings in Korea, among other factors, we decided to apply for a partial refund claim for taxes previously withheld from licensees in Korea on payments due under their license agreements to which we have claimed a foreign tax credit in the United States. As a result, \$1.7 billion and \$1.9 billion was recorded as a noncurrent income taxes receivable (recorded in other assets) at September 25, 2022 and

September 26, 2021, respectively, and $2.1 billion and $1.9 billion was recorded as a noncurrent liability for uncertain tax benefits (recorded in other liabilities) at September 25, 2022 and September 26, 2021, respectively.

At September 25, 2022, we estimated remaining future payments of $1.7 billion for a one-time repatriation tax accrued in fiscal 2018, after application of certain tax credits, which is payable in installments over the next four years. At September 25, 2022, $207 million was recorded in other current liabilities, reflecting the next installment due in January 2023, with the remaining noncurrent portion presented as income taxes payable on our balance sheet.

We continue to assert that certain of our foreign earnings are not indefinitely reinvested. At September 25, 2022, we had not recorded a deferred tax liability of approximately $70 million related to foreign withholding taxes on approximately $851 million of undistributed earnings of certain subsidiaries that we continue to consider to be indefinitely reinvested outside the

United States. Should we decide to no longer indefinitely reinvest such earnings outside the U.S., we would have to adjust the income tax provision in the period we make such determination.

We have tax incentives in Singapore that require we meet specified employment and other criteria. Although our profit in Singapore declined as a result of restructuring our operations in 2018, we were required to meet (and did meet) certain incentive requirements through March 2022. Failure to meet such requirements could have required us to refund previously realized material tax benefits for 2017 and 2018.

We had deferred tax assets and deferred tax liabilities as follows (in millions):

	September 25, 2022	September 26, 2021
Unused tax credits	$ 1,624	$ 1,504
Unused net operating losses	887	663
Customer incentives	807	762
Accrued liabilities and reserves	264	483
Share-based compensation	225	175
Operating lease liabilities	202	188
Unrealized losses on other investments and marketable securities	197	106
Unearned revenues	100	181
Other	335	165
Total gross deferred tax assets	4,641	4,227
Valuation allowance	(2,223)	(1,926)
Total net deferred tax assets	2,418	2,301
Intangible assets	(315)	(198)
Operating lease assets	(184)	(174)
Property, plant and equipment	(101)	(111)
Unrealized gains on other investments and marketable securities	(84)	(215)
Accrued withholding taxes	(62)	(42)
Other	(36)	(34)
Total deferred tax liabilities	(782)	(774)
Net deferred tax assets	$ 1,636	$ 1,527
Reported as:		
Non-current deferred tax assets	$ 1,803	$ 1,591
Non-current deferred tax liabilities (1)	(167)	(64)
	$ 1,636	$ 1,527

(1) Non-current deferred tax liabilities were included in other liabilities in the consolidated balance sheets.

At September 25, 2022, we had unused federal net operating loss carryforwards of $808 million, of which $134 million expire from 2023 through 2037 and $674 million may be carried forward indefinitely, unused state net operating loss carryforwards of $896 million expiring from 2023 through 2037 and unused foreign net operating loss carryforwards of $2.6 billion, of which substantially all may be carried forward indefinitely. At September 25, 2022, we had unused state tax credits of $1.5 billion, of which substantially all may be carried forward indefinitely, unused federal tax credits of $135 million expiring from 2028 through 2041 and unused tax credits of $54 million in foreign jurisdictions expiring from 2034 through 2042. We do not expect our federal net operating loss carryforwards to expire unused.

At September 25, 2022, we have provided a valuation allowance on certain state tax credits, foreign deferred tax assets, state net operating losses and federal tax credits of $1.5 billion, $673 million, $42 million and $4 million, respectively. The valuation allowance reflects the uncertainties surrounding our ability to generate sufficient future taxable income in certain tax jurisdictions to utilize our net operating losses. We believe, more likely than not, that we will have sufficient taxable income after deductions related to share-based awards to utilize our remaining deferred tax assets.

A summary of the changes in the amount of unrecognized tax benefits for fiscal 2022, 2021 and 2020 follows (in millions):

	2022	2021	2020
Beginning balance of unrecognized tax benefits	$ 2,136	$ 1,901	$ 1,705
Additions based on prior year tax positions	58	56	20
Reductions for prior year tax positions and lapse in statute of limitations	(136)	(13)	(2)
Additions for current year tax positions	184	213	192
Settlements with taxing authorities	(51)	(21)	(14)
Ending balance of unrecognized tax benefits	$ 2,191	$ 2,136	$ 1,901

Of the $2.2 billion of unrecognized tax benefits, $2.0 billion has been recorded to other liabilities. We believe that it is reasonably possible that certain unrecognized tax benefits recorded at September 25, 2022 may result in a cash payment in fiscal 2023. Unrecognized tax benefits at September 25, 2022 included $135 million for tax positions that, if recognized, would impact the effective tax rate. The unrecognized tax benefits differ from the amount that would affect our effective tax rate primarily because the unrecognized tax benefits were included on a gross basis and did not reflect related receivables or secondary impacts, such as the federal deduction for state taxes, adjustments to deferred tax assets and the valuation allowance that might be required if our tax positions are sustained. The increase in unrecognized tax benefits for all periods presented was primarily due to expected refunds of Korean withholding tax previously paid (which such increase had an insignificant impact to our income tax provision). If successful, the refund will result in a corresponding reduction in U.S. foreign tax credits. We believe that it is likely that the total amount of unrecognized tax benefits at September 25, 2022 will increase in fiscal 2023 as licensees in Korea continue to withhold taxes on future payments due under their licensing agreements at a rate higher than we believe is owed; such increase is not expected to have a significant impact on our income tax provision. At September 25, 2022, total interest and penalties related to unrecognized tax benefits accrued in other current liabilities and other liabilities was $168 million, with a corresponding noncurrent income taxes receivable of $108 million recorded in other assets for expected refunds of certain tax benefits.

We file income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. For tax years prior to fiscal 2021, we are a participant in the IRS Compliance Assurance Process (CAP) Program, whereby we and the IRS endeavor to agree on the treatment of all tax issues prior to the tax return being filed. We are no longer subject to U.S. federal income tax examinations for years prior to fiscal 2018. We are also subject to examination in other taxing jurisdictions in the U.S. and numerous foreign jurisdictions. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds, many of which are open for periods after fiscal 2001. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. At September 25, 2022, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Cash amounts paid for income taxes, net of refunds received, were $2.1 billion, $1.5 billion and $0.8 billion for fiscal 2022, 2021 and 2020, respectively.

Note 4. Capital Stock

Stock Repurchase Program. On October 12, 2021, we announced a $10.0 billion stock repurchase program. The stock repurchase program has no expiration date. At September 25, 2022, $8.1 billion remained authorized for repurchase under our stock repurchase program.

Shares Outstanding. Shares of common stock outstanding at September 25, 2022 were as follows (in millions):

Balance at beginning of period	1,125
Issued	17
Repurchased	(21)
Balance at end of period	1,121

Dividends. On October 14, 2022, we announced a cash dividend of $0.75 per share on our common stock, payable on December 15, 2022 to stockholders of record as of the close of business on December 1, 2022.

Note 5. Employee Benefit Plans

Equity Compensation Plans. On March 10, 2020, our stockholders approved the amended and restated Qualcomm Incorporated 2016 Long-Term Incentive Plan (the 2016 Plan), including an increase in the share reserve by 75 million shares. The 2016 Plan provides for the grant of RSUs and other stock-based awards. The RSUs generally include dividend-equivalent rights and vest over three years from the date of grant. The Board of Directors may amend or terminate the 2016

Plan at any time. Certain amendments, including an increase in the share reserve, require stockholder approval. At September 25, 2022, approximately 43 million shares were available for future grant under the 2016 Plan.

The following is a summary of employee RSU transactions under our 2016 Plan that contain only service requirements to vest:

	Number of Shares (in millions)	Weighted-Average Grant Date Fair Value
RSUs outstanding at September 26, 2021	29	$ 102.83
RSUs granted	20	136.09
RSUs canceled/forfeited	(2)	120.94
RSUs vested	(17)	96.02
RSUs outstanding at September 25, 2022	30	127.58

The weighted-average estimated grant date fair values of employee RSUs under our 2016 Plan that contain only service requirements to vest granted during fiscal 2021 and 2020 were $124.22 and $82.57 per share, respectively. Upon vesting, we issue new shares of common stock. For the majority of RSUs, shares are issued on the vesting dates net of the amount of shares needed to satisfy statutory tax withholding requirements to be paid by us on behalf of the employees. As a result, the actual number of shares issued will be fewer than the number of RSUs outstanding. The annual pre-vest forfeiture rate for RSUs was estimated to be approximately 6%, 6% and 7% in fiscal 2022, 2021 and 2020, respectively.

At September 25, 2022, total unrecognized compensation expense related to such non-vested RSUs granted prior to that date was $2.6 billion, which is expected to be recognized over a weighted-average period of 1.8 years. The total vest-date fair value of such RSUs that vested during fiscal 2022, 2021 and 2020 was $2.9 billion, $2.6 billion and $1.3 billion, respectively. The total shares withheld to satisfy statutory tax withholding requirements related to all share-based awards were 5 million, 5 million and 4 million in fiscal 2022, 2021 and 2020, respectively and were based on the value of the awards on their vesting dates as determined by our closing stock price.

The total tax benefits realized, including the excess tax benefits, related to share-based awards during fiscal 2022, 2021 and 2020 were $627 million, $567 million and $273 million, respectively.

Employee Stock Purchase Plan. We have an employee stock purchase plan for eligible employees to purchase shares of common stock at 85% of the lower of the fair market value on the first or the last day of each offering period, which is generally six months. Employees may authorize us to withhold up to 15% of their compensation during any offering period, subject to certain limitations. The employee stock purchase plan includes a non-423(b) plan. The shares reserved for future issuance under the employee stock purchase plan were 22 million at September 25, 2022. During fiscal 2022, 2021 and 2020, 3 million, 3 million and 5 million shares, respectively, were issued under the plan at an average price of $124.98, $107.48 and $66.53 per share, respectively. At September 25, 2022, total unrecognized compensation expense related to non-vested purchase rights granted prior to that date was $44 million. We recorded cash received from the exercise of purchase rights of $355 million, $343 million and $306 million during fiscal 2022, 2021 and 2020, respectively.

Note 6. Debt

Long-term Debt. In May 2022, we issued unsecured fixed-rate notes, consisting of $500 million of fixed-rate 4.25% notes and $1.0 billion of fixed-rate 4.50% notes (May 2022 Notes) that mature on May 20, 2032 and May 20, 2052, respectively. The net proceeds from the May 2022 Notes, together with cash on hand, were used to repay $1.5 billion of fixed-rate notes that matured in May 2022.

The following table provides a summary of our long-term debt and current portion of long-term debt:

	September 25, 2022			September 26, 2021		
	Maturities	Amount (in millions)	Effective Rate	Maturities	Amount (in millions)	Effective Rate
May 2015 Notes	2025 - 2045	$ 3,865	3.46% - 4.73%	2022 - 2045	$ 5,405	2.63% - 4.73%
May 2017 Notes	2023 - 2047	5,860	2.68% - 4.46%	2023 - 2047	5,860	0.92% - 4.46%
May 2020 Notes	2030 - 2050	2,000	2.97% - 3.30%	2030 - 2050	2,000	2.31% - 3.30%
August 2020 Notes	2028 - 2032	2,207	2.50% - 3.52%	2028 - 2032	2,207	1.98% - 2.66%
May 2022 Notes	2032 - 2052	1,500	3.13% - 4.26%		—	
Total principal		15,432			15,472	
Unamortized discount, including debt issuance costs		(241)			(234)	
Hedge accounting adjustments		(208)			7	
Total long-term debt		$ 14,983			$ 15,245	
Reported as:						
Short-term debt		$ 1,446			$ 1,544	
Long-term debt		13,537			13,701	
Total		$ 14,983			$ 15,245	

At September 25, 2022, future principal payments were $1.4 billion in fiscal 2023, $914 million in fiscal 2024, $1.4 billion in fiscal 2025, $2.0 billion in fiscal 2027 and $9.7 billion after fiscal 2027; no principal payments are due in fiscal 2026. At September 25, 2022, the aggregate fair value of the notes, based on Level 2 inputs, was approximately $14.0 billion.

At September 25, 2022, with the exception of $500 million of outstanding unsecured floating-rate notes due January 30, 2023, all of our outstanding long-term debt is comprised of unsecured fixed-rate notes. We may redeem the outstanding fixed-rate notes at any time in whole, or from time to time in part, at specified make-whole premiums as defined in the applicable form of note. We may not redeem the outstanding floating-rate notes prior to maturity. The obligations under the notes rank equally in right of payment with all of our other senior unsecured indebtedness and will effectively rank junior to all liabilities of our subsidiaries.

The effective interest rates for the notes include the interest on the notes, amortization of the discount, which includes debt issuance costs, and if applicable, adjustments related to hedging. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes. Cash interest paid related to our commercial paper program and long-term debt, net of cash received from the related interest rate swaps, was $491 million, $477 million and $507 million during fiscal 2022, 2021 and 2020, respectively.

Interest Rate Swaps. At September 25, 2022 and September 26, 2021, we had outstanding forward-starting interest rate swaps with an aggregate notional amount of $1.6 billion and $2.6 billion, respectively. During the third quarter of fiscal 2022, we terminated $1 billion of swaps associated with our May 2022 Notes, and the related gains of $123 million are being reclassified from accumulated comprehensive income as a reduction to interest expense over the terms of the related debt.

At September 25, 2022, we had outstanding interest rate swaps with an aggregate notional amount of $2.1 billion that are designated as fair value hedges and allow us to effectively convert fixed-rate payments into floating-rate payments on a portion of our outstanding long-term debt.

Commercial Paper Program. We have an unsecured commercial paper program, which provides for the issuance of up to $4.5 billion. Net proceeds from this program are for general corporate purposes. Maturities of commercial paper can range from 1 to up to 397 days. At September 25, 2022 and September 26, 2021, we had $499 million and $500 million, respectively, of outstanding commercial paper recorded as short-term debt with a weighted-average interest rate of 2.69% and 0.13%, respectively, which included fees paid to the commercial paper dealers. At September 25, 2022 and September 26, 2021, the weighted-average remaining days to maturity were 27 days and 39 days, respectively. The carrying value of the outstanding commercial paper approximated its estimated fair value at September 25, 2022.

Revolving Credit Facility. We have a Revolving Credit Facility that provides for unsecured revolving facility loans, swing line loans and letters of credit in an aggregate amount of up to $4.5 billion, which expires on December 8, 2025. At September 25, 2022, no amounts were outstanding under the Revolving Credit Facility.

Debt Covenants. The Revolving Credit Facility requires that we comply with certain covenants, including that we maintain an interest coverage ratio as defined in the agreement. We are not subject to any financial covenants under the notes nor any covenants that would prohibit us from incurring additional indebtedness ranking equal to the notes, paying dividends or issuing securities or repurchasing securities issued by us or our subsidiaries. At September 25, 2022, we were in compliance with the applicable covenants under the Revolving Credit Facility.

Note 7. Commitments and Contingencies

Legal and Regulatory Proceedings.

Consolidated Securities Class Action Lawsuit: On January 23, 2017 and January 26, 2017, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and certain of our then current and former officers and directors. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 thereunder, by making false and misleading statements and omissions of material fact in connection with certain allegations that we are or were engaged in anticompetitive conduct. The complaints sought unspecified damages, interest, fees and costs. On May 4, 2017, the court consolidated the two actions. On July 3, 2017, the plaintiffs filed a consolidated amended complaint asserting the same basic theories of liability and requesting the same basic relief. On September 1, 2017, we filed a motion to dismiss the consolidated amended complaint, and on March 18, 2019, the court denied our motion. On January 15, 2020, we filed a motion for judgment on the pleadings, which the court denied on February 3, 2022. On May 23, 2022, the plaintiffs filed a motion for class certification, and a hearing on the motion was held on October 19, 2022. The court has not yet ruled on the motion. We believe the plaintiffs’ claims are without merit.

Consumer Class Action Lawsuits: Beginning in January 2017, a number of consumer class action complaints were filed against us in the United States District Courts for the Southern and Northern Districts of California, each on behalf of a putative class of purchasers of cellular phones and other cellular devices. In April 2017, the Judicial Panel on Multidistrict Litigation transferred the cases that had been filed in the Southern District of California to the Northern District of California. On July 11, 2017, the plaintiffs filed a consolidated amended complaint alleging that we violated California and federal antitrust and unfair competition laws by, among other things, refusing to license standard-essential patents to our competitors, conditioning the supply of certain of our baseband chipsets on the purchaser first agreeing to license our entire patent portfolio, entering into exclusive deals with companies, including Apple Inc., and charging unreasonably high royalties that do not comply with our commitments to standard setting organizations. The complaint sought unspecified damages and disgorgement and/or restitution, as well as an order that we be enjoined from further unlawful conduct. On July 5, 2018, the plaintiffs filed a motion for class certification, and on September 27, 2018, the court granted that motion. We appealed the district court’s class certification order to the United States Court of Appeals for the Ninth Circuit (Ninth Circuit), and on September 29, 2021, the Ninth Circuit vacated the class certification order, ruling that the district court had failed to correctly assess the propriety of applying California law to a nationwide class. The Ninth Circuit remanded the case to the district court and instructed the court to consider the effect of *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated* (which the Ninth Circuit decided in favor of Qualcomm in August 2020) on this case. On June 10, 2022, the plaintiffs filed an amended complaint, limiting the proposed class to California residents rather than a nationwide class, and on August 1, 2022, we filed a motion to dismiss the amended complaint. A hearing on our motion is scheduled for November 15, 2022. We believe the plaintiffs’ claims are without merit.

Since November 2017, several other consumer class action complaints have been filed against us in Canada (in the Supreme Court of British Columbia and the Quebec Superior Court), Israel (in the Haifa District Court) and the United Kingdom (in the Competition Appeal Tribunal), each on behalf of a putative class of purchasers of cellular phones and other cellular devices, alleging violations of certain of those countries’ competition and consumer protection laws. The claims in these complaints are similar to those in the U.S. consumer class action complaints. The complaints seek damages. We believe the plaintiffs’ claims are without merit.

ParkerVision, Inc. v. QUALCOMM Incorporated: On May 1, 2014, ParkerVision filed a complaint against us in the United States District Court for the Middle District of Florida alleging that certain of our products infringed seven ParkerVision patents. On August 21, 2014, ParkerVision amended the complaint, alleging that we infringed 11 ParkerVision patents and sought damages and injunctive and other relief. ParkerVision subsequently reduced the number of patents asserted to three. The asserted patents are now expired, and injunctive relief is no longer available. ParkerVision continues to seek damages related to the sale of many of our radio frequency (RF) products sold between 2008 and 2018. On March 23, 2022, the court entered judgment in our favor on all claims and closed the case. On April 20, 2022, ParkerVision filed a notice of appeal to the United States Court of Appeals for the Federal Circuit. We believe ParkerVision’s claims are without merit.

Arm Ltd. v. QUALCOMM Incorporated: On August 31, 2022, Arm Ltd. (ARM) filed a complaint against us in the United States District Court for the District of Delaware. Our subsidiaries, Qualcomm Technologies, Inc. and NuVia, Inc. (Nuvia), are also named in the complaint. The complaint alleges that following our acquisition of Nuvia, we and Nuvia breached Nuvia's Architecture License Agreement with ARM (the Nuvia ALA) by failing to comply with the termination obligations under the Nuvia ALA. The complaint seeks specific performance, including that we cease all use of and destroy any technology that was developed under the Nuvia ALA, including processor core technology. ARM also contends that we violated the Lanham Act through trademark infringement and false designation of origin through unauthorized use of ARM's trademarks and seeks associated injunctive and declaratory relief. ARM further seeks exemplary or punitive damages, costs, expenses and reasonable attorney's fees, and equitable relief addressing any infringement occurring after entry of judgment. We believe ARM's claims are without merit.

On September 30, 2022, we filed our Answer and Counterclaim in response to ARM's complaint denying ARM's claims. Our counterclaim seeks a declaratory judgment that we did not breach the Nuvia ALA or the Technology License Agreement between Nuvia and ARM and that, following the acquisition of Nuvia, our architected cores (including all further developments, iterations or instantiations of the technology we acquired from Nuvia), server System-on-Chip (SoC) and compute SoC are fully licensed under our existing Architecture License Agreement and Technology License Agreement with ARM (the ARM-Qualcomm Agreements). We further seek an order enjoining ARM from making any claim that our products are not licensed under the ARM-Qualcomm Agreements, are not ARM-compliant or that we are prohibited from using ARM's marks in the marketing of any such products. On October 26, 2022, we filed an Amended Counterclaim seeking additional declaratory relief that certain statements ARM is making in the marketplace concerning our rights under the ARM-Qualcomm Agreements are false, and that ARM has no right to prevent us from shipping our products, which are validly licensed.

Korea Fair Trade Commission (KFTC) Investigation (2015): On March 17, 2015, the KFTC notified us that it was conducting an investigation of us relating to the Korean Monopoly Regulation and Fair Trade Act (MRFTA). On December 27, 2016, the KFTC announced that it had reached a decision in the investigation, finding that we violated provisions of the MRFTA. On January 22, 2017, we received the KFTC's formal written decision, which found that the following conducts violate the MRFTA: (i) refusing to license, or imposing restrictions on licenses for, cellular communications standard-essential patents with competing modem chipset makers; (ii) conditioning the supply of modem chipsets to handset suppliers on their execution and performance of license agreements with us; and (iii) coercing agreement terms including portfolio license terms, royalty terms and free cross-grant terms in executing patent license agreements with handset makers. The KFTC's decision orders us to: (a) upon request by modem chipset companies, engage in good-faith negotiations for patent license agreements, without offering unjustifiable conditions, and if necessary submit to a determination of terms by an independent third party; (b) not demand that handset companies execute and perform under patent license agreements as a precondition for purchasing modem chipsets; (c) not demand unjustifiable conditions in our license agreements with handset companies and, upon request, renegotiate existing patent license agreements; and (d) notify modem chipset companies and handset companies of the decision and order imposed on us and report to the KFTC new or amended agreements. According to the KFTC's decision, the foregoing will apply to transactions between us and the following enterprises: (1) handset manufacturers headquartered in Korea and their affiliate companies; (2) enterprises that sell handsets in or to Korea and their affiliate companies; (3) enterprises that supply handsets to companies referred to in (2) above and the affiliate companies of such enterprises; (4) modem chipset manufacturers headquartered in Korea and their affiliate companies; and (5) enterprises that supply modem chipsets to companies referred to in (1), (2) or (3) above and the affiliate companies of such enterprises. The KFTC's decision also imposed a fine of 1.03 trillion Korean won (approximately $927 million), which we paid on March 30, 2017.

On February 21, 2017, we filed an action in the Seoul High Court to cancel the KFTC's decision. The Seoul High Court held hearings concluding on August 14, 2019, and on December 4, 2019, announced its judgment affirming certain portions of the KFTC's decision and finding other portions of the KFTC's decision unlawful. The Seoul High Court cancelled the KFTC's remedial orders described in (c) above, and solely insofar as they correspond thereto, the Seoul High Court cancelled the KFTC's remedial orders described in (d) above. The Seoul High Court dismissed the remainder of our action to cancel the KFTC's decision. On December 19, 2019, we filed a notice of appeal to the Korea Supreme Court challenging those portions of the Seoul High Court decision that are not in our favor. The KFTC filed a notice of appeal to the Korea Supreme Court challenging the portions of the Seoul High Court decision that are not in its favor. Both we and the KFTC have filed briefs on the merits. The Korea Supreme Court has not yet ruled on our appeal or that of the KFTC. We believe that our business practices do not violate the MRFTA.

Korea Fair Trade Commission (KFTC) Investigation (2020): On June 8, 2020, the KFTC informed us that it was conducting an investigation of us relating to the MRFTA. The KFTC has not provided a formal notice on the scope of its investigation, but we believe it concerns our business practices in connection with our sale of RFFE components. We continue to cooperate with the KFTC as it conducts its investigation. If a violation is found, a broad range of remedies is potentially available to the KFTC, including imposing a fine (of up to 3% of our sales in the relevant markets during the alleged period of violation) and/or injunctive relief prohibiting or restricting certain business practices. It is difficult to predict the outcome of this matter or what remedies, if any, may be imposed by the KFTC. We believe that our business practices do not violate the MRFTA.

Icera Complaint to the European Commission (EC): On June 7, 2010, the EC notified and provided us with a redacted copy of a complaint filed with the EC by Icera, Inc. (subsequently acquired by Nvidia Corporation) alleging that we were engaged in anticompetitive activity. On July 16, 2015, the EC announced that it had initiated formal proceedings in this matter. On July 18, 2019, the EC issued a decision finding that between 2009 and 2011, we engaged in predatory pricing by selling certain baseband chipsets to two customers at prices below cost with the intention of hindering competition and imposed a fine of approximately 242 million euros. On October 1, 2019, we filed an appeal of the EC's decision with the General Court of the European Union. The court has not yet ruled on our appeal. We believe that our business practices do not violate the European Union (EU) competition rules.

In the third quarter of fiscal 2019, we recorded a charge of $275 million to other expenses related to this EC fine. We provided a financial guarantee in the first quarter of fiscal 2020 to satisfy the obligation in lieu of cash payment while we appeal the EC's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding and included in other current liabilities.

European Commission (EC) Investigation: On October 15, 2014, the EC notified us that it was conducting an investigation of us relating to Articles 101 and/or 102 of the Treaty on the Functioning of the European Union (TFEU). On January 24, 2018, the EC issued a decision finding that pursuant to an agreement with Apple Inc. we paid significant amounts to Apple on the condition that it exclusively use our baseband chipsets in its smartphones and tablets, reducing Apple's incentives to source baseband chipsets from our competitors and harming competition and innovation for certain baseband chipsets, and imposed a fine of 997 million euros. On April 6, 2018, we filed an appeal of the EC's decision with the General Court of the European Union. From May 4, 2021 to May 6, 2021, a hearing on our appeal was held before the court. On June 15, 2022, the court issued a ruling annulling the EC's decision in its entirety. The deadline for the EC to appeal the General Court's decision to the European Court of Justice expired in August 2022. Consequently, the case is now over.

In the first quarter of fiscal 2018, we recorded a charge of $1.2 billion to other expenses related to this EC fine. We provided financial guarantees in the third quarter of fiscal 2018 to satisfy the obligation in lieu of cash payment while we appealed the EC's decision. The fine accrued interest at a rate of 1.50% per annum while it was outstanding. In the first quarter of fiscal 2019, we designated the liability as a hedge of our net investment in certain foreign subsidiaries, with gains and losses recorded in accumulated other comprehensive income (loss) as a component of the foreign currency translation adjustment. As a result of the General Court's ruling, in the third quarter of fiscal 2022, we recorded a $1.1 billion benefit in other income and a $62 million reduction in interest expense resulting from the reversal of the accrued fine and the associated interest previously recorded.

Contingent Losses and Other Considerations: We will continue to vigorously defend ourselves in the foregoing matters. However, litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss, particularly in antitrust and trade regulation investigations. Other than with respect to the EC fine related to the Icera Complaint to the European Commission, we have not recorded any accrual at September 25, 2022 for contingent losses associated with these matters based on our belief that losses, while reasonably possible, are not probable. Further, any possible amount or range of loss cannot be reasonably estimated at this time. The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows. We are engaged in numerous other legal actions not described above arising in the ordinary course of our business (for example, proceedings relating to employment matters or the initiation or defense of proceedings relating to intellectual property rights) and, while there can be no assurance, we believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Indemnifications. We generally do not indemnify our customers, licensees and suppliers for losses sustained from infringement of third-party intellectual property rights. However, we are contingently liable under certain agreements to defend and/or indemnify certain customers, licensees and suppliers against certain types of liability and/or damages arising from the infringement of third-party intellectual property rights. Our obligations under these agreements may be limited in terms of time and/or amount, and in some instances, we may have recourse against third parties for certain payments made by us. Claims and reimbursements under indemnification arrangements have not been material to our consolidated financial statements. We have not recorded accruals for certain claims under indemnification arrangements based on our belief that additional liabilities, while possible, are not probable. Further, any possible range of loss cannot be reasonably estimated at this time.

Purchase Obligations. We have agreements with suppliers and other parties to purchase inventory, other goods and services and long-lived assets. Such agreements include multi-year capacity purchase commitments with certain suppliers of our integrated circuit products. Total advance payments related to multi-year capacity commitments recorded on the consolidated balance sheets at September 25, 2022 and September 26, 2021 were $3.8 billion and $1.7 billion, respectively, of which $701 million and $90 million were recorded in other current assets, respectively, and $3.1 billion and $1.6 billion were recorded in other assets, respectively. Integrated circuit product inventory obligations represent purchase commitments (including those under multi-year capacity purchase commitments to the extent such minimum amounts are both fixed and determinable) for raw materials, semiconductor die, finished goods and manufacturing services, such as wafer bump, probe, assembly and final test. Under our manufacturing relationships with our foundry suppliers and assembly and test service providers, cancellation of outstanding purchase commitments is generally allowed but may result in the payment of costs incurred through the date of cancellation, and in some cases, incremental fees and/or the loss of amounts paid in advance related to capacity underutilization and the failure to meet future minimum purchase volumes under multi-year capacity purchase commitments. Obligations under our purchase agreements, which primarily relate to integrated circuit product inventory obligations, at September 25, 2022 totaled $24.5 billion of which, $13.3 billion is expected to be paid in the next 12 months.

Operating Leases. We lease certain of our land, facilities and equipment under operating leases, with terms ranging from less than one year to 20 years, some of which include options to extend for up to 20 years. At September 25, 2022 and September 26, 2021, the weighted-average remaining lease term for operating leases were eight years and seven years, respectively. Operating lease expense for fiscal 2022, 2021 and 2020 was $207 million, $203 million and $181 million, respectively. At September 25, 2022, other assets included $631 million of operating lease assets, with corresponding lease liabilities of $104 million recorded in other current liabilities and $573 million recorded in other liabilities. At September 26, 2021, other assets included $513 million of operating lease assets, with corresponding lease liabilities of $126 million recorded in other current liabilities and $428 million recorded in other liabilities.

At September 25, 2022, future lease payments under our operating leases were as follows (in millions):

	September 25, 2022
2023	$ 129
2024	114
2025	92
2026	87
2027	83
Thereafter	358
Total future lease payments	863
Imputed interest	(186)
Total lease liability balance	$ 677

Note 8. Segment Information

We are organized on the basis of products and services and have three reportable segments. Our operating segments reflect the way our businesses and management/reporting structure are organized internally and the way our Chief Operating Decision Maker (CODM), who is our CEO, reviews financial information, makes operating decisions and assesses business performance. We also consider, among other items, the way budgets and forecasts are prepared and reviewed and the basis on which executive compensation is determined, as well as the similarities and the level of centralized resource planning within our operating segments, such as the nature of products, the level of shared products, technology and other resources, production processes and customer base. We conduct business primarily through our QCT semiconductor business and our QTL licensing business. QCT develops and supplies integrated circuits and system software based on 3G/4G/5G and other technologies, including RFFE, for use in mobile devices; automotive systems for connectivity, digital cockpit and ADAS/AD; and IoT including consumer electronic devices; industrial devices; and edge networking products. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including QGOV (Qualcomm Government Technologies) and our cloud AI inference processing initiative.

Our CODM allocates resources to and evaluates the performance of our segments based on revenues and earnings (loss) before income taxes (EBT). Segment EBT includes the allocation of certain corporate expenses to the segments, including depreciation and amortization expense related to unallocated corporate assets. Certain income and charges are not allocated to segments in our management reports because they are not considered in evaluating the segments' operating performance. Unallocated income and charges include certain interest expense, certain net investment income, certain share-based compensation, gains and losses on our deferred compensation plan liabilities and related assets and certain research and development expenses, certain selling, general and administrative expenses and other expenses or income that were deemed to be not directly related to the businesses of the segments. Additionally, unallocated charges include recognition of the step-up of inventories and property, plant and equipment to fair value, amortization of certain intangible assets and certain other acquisition-related charges, third-party acquisition and integration services costs and certain other items, which may include major restructuring and restructuring-related costs, asset impairment charges and awards, settlements and/or damages arising from legal or regulatory matters. Our CODM does not evaluate our operating segments using discrete asset information.

The table below presents revenues and EBT for reportable segments (in millions):

	2022	2021	2020
Revenues:			
QCT	$ 37,677	$ 27,019	$ 16,493
QTL	6,358	6,320	5,028
QSI	31	45	36
Reconciling items	134	182	1,974
Total	$ 44,200	$ 33,566	$ 23,531
EBT:			
QCT	$ 12,837	$ 7,763	$ 2,763
QTL	4,628	4,627	3,442
QSI	(279)	916	(11)
Reconciling items	(2,188)	(3,032)	(475)
Total	$ 14,998	$ 10,274	$ 5,719

The net book value of long-lived tangible assets located outside of the U.S. was $3.5 billion and $2.9 billion at September 25, 2022 and September 26, 2021, respectively. The net book value of long-lived tangible assets located in the U.S. was $2.3 billion and $2.2 billion at September 25, 2022 and September 26, 2021, respectively.

We report revenues from external customers by country based on the location to which our products or services are delivered, which for QCT is generally the country in which our customers manufacture their products, and for licensing revenues, the invoiced addresses of our licensees. As a result, the revenues by country presented herein are not necessarily indicative of either the country in which the devices containing our products and/or intellectual property are ultimately sold to consumers or the country in which the companies that sell the devices are headquartered. For example, China revenues could include revenues related to shipments of integrated circuits for a company that is headquartered in South Korea but that manufactures devices in China, which devices are then sold to consumers in Europe and/or the United States. Revenues by country were as follows (in millions):

	2022	2021	2020
China (including Hong Kong)	$ 28,119	$ 22,512	$ 14,001
Vietnam	6,063	3,114	2,212
South Korea	3,164	2,368	2,964
United States	1,482	1,406	1,129
Other foreign	5,372	4,166	3,225
	$ 44,200	$ 33,566	$ 23,531

Reconciling items for revenues and EBT in a previous table were as follows (in millions):

	2022	2021	2020
Revenues:			
Nonreportable segments	$ 134	$ 128	$ 133
Unallocated revenues (Note 2)	—	54	1,841
	$ 134	$ 182	$ 1,974
EBT:			
Unallocated revenues (Note 2)	$ —	$ 54	$ 1,841
Unallocated cost of revenues	(266)	(277)	(340)
Unallocated research and development expenses	(1,767)	(1,820)	(1,046)
Unallocated selling, general and administrative expenses	(609)	(538)	(401)
Unallocated other income (Note 2)	1,059	—	28
Unallocated interest expense	(490)	(559)	(599)
Unallocated investment and other (expense) income, net	(91)	166	105
Nonreportable segments	(24)	(58)	(63)
	$ (2,188)	$ (3,032)	$ (475)

Certain revenues were not allocated to our segments in our management reports because they were not considered in evaluating segment results. Unallocated revenues in fiscal 2021 were comprised of the release of a variable constraint against revenues not previously allocated to our segment results. Unallocated revenues in fiscal 2020 were comprised of licensing revenues from Huawei resulting from the settlement agreement signed in July 2020 and royalties for sales made in the March 2020 and June 2020 quarters under a new global patent license agreement signed in July 2020.

Note 9. Acquisitions

Nuvia. On March 16, 2021, we completed the acquisition of Nuvia for $1.1 billion (net of $174 million cash acquired), substantially all of which was paid in cash. In connection with the acquisition, we assumed or replaced unvested Nuvia stock awards with Qualcomm stock awards with an estimated fair value of $258 million, which have post-acquisition requisite service periods of up to four years. At the time of the acquisition, Nuvia had certain in-process technologies and was comprised of a CPU (central processing unit) and technology design team with expertise in high performance processors, SoC and power management for compute-intensive devices and applications. Upon completion of development, Nuvia's technologies are expected to be integrated into certain QCT products. We recorded $885 million of goodwill, which is not deductible for tax purposes and was allocated to our QCT segment for annual impairment testing purposes. Goodwill is primarily attributable to assembled workforce and certain revenue and cost synergies expected to arise after the acquisition. We also recorded a $247 million in-process research and development intangible asset related to a single project, which is expected to be completed in fiscal 2023 and, upon completion, will be amortized over its useful life, which is expected to be seven years. Our results of operations for fiscal 2021 included the operating results of Nuvia since the acquisition date, the amounts of which were not material.

Veoneer. On October 4, 2021, we and SSW Partners, a New York-based investment partnership, entered into a definitive agreement to acquire Veoneer, Inc. (Veoneer). The transaction closed on April 1, 2022 (the Closing Date). Total cash consideration paid in the transaction was $4.7 billion, consisting of (i) $4.6 billion paid in respect of Veoneer's outstanding capital stock and equity awards and amounts paid to settle Veoneer's convertible senior notes (which were converted at the election of the note holders and settled in cash in the third quarter of fiscal 2022) and (ii) a $110 million termination fee paid to Magna International Inc. (Magna) in the first quarter of fiscal 2022. We funded substantially all of the cash consideration payable in the transaction in exchange for (i) the Arriver business (which SSW transferred to us shortly after the Closing Date) and (ii) the right to receive a majority of the proceeds upon the sale of the Non-Arriver businesses by SSW Partners. We intend to incorporate Arriver's computer vision, drive policy and driver assistance technologies into our Snapdragon automotive platform to deliver an integrated software SoC ADAS platform for automakers and Tier-1 automotive suppliers. SSW Partners retained Veoneer's

Tier-1 automotive supplier businesses, primarily consisting of the Active Safety and Restraint Control Systems businesses (the Non-Arriver businesses), which it intends to sell in one or more transactions.

We have agreed to provide certain funding of approximately $300 million to the Non-Arriver businesses while SSW Partners seeks a buyer(s), of which approximately $150 million of funding remained available to the Non-Arriver businesses at September 25, 2022. Such amounts, along with cash retained in the Non-Arriver business, are expected to be used to fund working and other near-term capital needs, as well as certain costs incurred in connection with the close of the acquisition.

Although we do not own or operate the Non-Arriver businesses, we have determined that we are the primary beneficiary, within the meaning of the Financial Accounting Standards Board (FASB) accounting guidance related to consolidation (ASC 810), of these businesses under the variable interest model. Factors considered in reaching this conclusion included, among others: (i) our involvement in the design of and our funding of substantially all of the total cash consideration payable in the transaction and (ii) our obligations to absorb losses and rights to receive returns from the Non-Arriver businesses. We expect that SSW Partners will complete the sale of the Non-Arriver businesses within fiscal 2023, subject to any required regulatory approvals and other closing conditions being met. Accordingly, the assets and liabilities of the Non-Arriver businesses are consolidated and presented as held for sale on our balance sheet, and the operating results are presented as discontinued operations.

Our accounting purchase price was approximately $4.3 billion, substantially all of which relates to our share of cash consideration at close for the outstanding common shares of Veoneer and the Magna termination fee and excludes Veoneer's convertible senior notes that are reflected as an assumed liability. We have finalized the purchase price allocation, except for certain tax matters. Accordingly, the preliminary purchase price allocation shown below could change during the remainder of the measurement period (which will not exceed 12 months from the Closing Date). The preliminary allocation of the purchase price to the assets acquired and liabilities assumed based on their fair values was as follows (in millions):

Cash	$ 30
Current held for sale assets, net of costs to sell (1)	626
Completed technology-based intangible assets	349
In-process research and development (IPR&D)	298
Goodwill	2,789
Noncurrent held for sale assets (1)	1,186
Other assets	333
Total assets	5,611
Current held for sale liabilities (1)	(677)
Convertible senior notes	(352)
Noncurrent held for sale liabilities (1)	(128)
Other liabilities	(203)
Total liabilities	(1,360)
Net assets acquired	$ 4,251

(1) Held for sale assets and liabilities relate to the Non-Arriver businesses and were measured at fair value less costs to sell (including SSW Partners' estimated return with respect to the sale proceeds of the Non-Arriver businesses), which was estimated using a market approach based on significant inputs that were not observable. In the fourth quarter of fiscal 2022, we finalized and adjusted the valuation of the Non-Arriver businesses by $229 million and recorded an offsetting adjustment to decrease goodwill for this amount. The Non-Arriver businesses' assets are not available to be used to settle our obligations, and the Non-Arriver businesses' creditors do not have recourse to us. SSW Partners owns and operates the Non-Arriver businesses, and its funding of the purchase price for Veoneer was recorded as a component of held for sale liabilities. The underlying classes of assets and liabilities held for sale have not been presented because such amounts are not material.

Goodwill related to this transaction was allocated to our QCT segment, and $471 million of which is expected to be deductible for tax purposes. Goodwill is primarily attributable to assembled workforce and certain synergies expected to arise after the acquisition. Completed technology-based intangible assets are being amortized on a straight-line basis over the weighted-average useful life of nine years. IPR&D relates to a single project that is expected to be completed in fiscal 2025. Upon completion, we expect the IPR&D to be amortized over its useful life of seven years. We valued the completed technology and IPR&D using an income approach based on significant unobservable inputs.

Since the Closing Date, the operating results of the Arriver and Non-Arriver businesses were initially reported on a one quarter lag. During the fourth quarter of fiscal 2022, we eliminated the one-quarter reporting lag previously used to consolidate the Arriver business to provide contemporaneous reporting within our consolidated financial statements, which we believe is preferable. The effect of this change was not material to our consolidated financial statements, and the impact of eliminating the one quarter reporting lag has been included in our operating results in the fourth quarter of fiscal 2022. The Non-Arriver businesses are presented as discontinued operations and remain on a one quarter reporting lag. Pro forma results of operations have not been presented because the effects of this acquisition were not material to our consolidated results of operations. The cash flows generated from (used by) the Non-Arriver businesses are reflected as discontinued operations and are classified as operating, investing and financing activities in the consolidated statements of cash flows. Investing and financing activities from discontinued operations reported in fiscal 2022 were not material.

Other. During fiscal 2022, we acquired eight other businesses for a total accounting purchase price of $792 million. We recognized $202 million of intangible assets (which primarily relate to completed technology) that will be amortized on a straight-line basis over a weighted-average useful life of six years. Substantially all of the goodwill recognized in these transactions of $598 million was allocated to our QCT segment.

Note 10. Fair Value Measurements

The following table presents our fair value hierarchy for assets and liabilities measured at fair value on a recurring basis at September 25, 2022 (in millions):

	Level 1	Level 2	Level 3	Total
Assets:				
Cash equivalents	$ 922	$ 198	$ —	$ 1,120
Marketable securities:				
Corporate bonds and notes	—	3,330	—	3,330
Equity securities	164	—	—	164
Mortgage- and asset-backed securities	—	99	—	99
U.S. Treasury securities and government-related securities	—	16	—	16
Total marketable securities	164	3,445	—	3,609
Derivative instruments	—	271	—	271
Other investments	613	—	15	628
Total assets measured at fair value	$ 1,699	$ 3,914	$ 15	$ 5,628
Liabilities:				
Derivative instruments	$ —	$ 346	$ —	$ 346
Other liabilities	612	—	—	612
Total liabilities measured at fair value	$ 612	$ 346	$ —	$ 958

Note 11. Marketable Securities

Our marketable securities were all classified as current and were comprised as follows (in millions):

	September 25, 2022	September 26, 2021
Available-for-sale debt securities:		
Corporate bonds and notes	$ 3,330	$ 4,459
Mortgage- and asset-backed securities	99	147
U.S. Treasury securities and government-related securities	16	10
Total available-for-sale debt securities	3,445	4,616
Equity securities	164	682
Total marketable securities	$ 3,609	$ 5,298

The contractual maturities of available-for-sale debt securities were as follows (in millions):

	September 25, 2022
Years to Maturity:	
Less than one year	$ 994
One to five years	2,352
No single maturity date	99
Total	$ 3,445

Debt securities with no single maturity date included mortgage- and asset-backed securities.

SCHEDULE II
QUALCOMM Incorporated
VALUATION AND QUALIFYING ACCOUNTS

The table below details the activity of the valuation allowance on deferred tax assets for fiscal 2022, 2021 and 2020 (in millions):

	Balance at Beginning of Period	Charged to Costs and Expenses	Other	Balance at End of Period
Year ended September 25, 2022	$ 1,926	$ 278	$ 19	$ 2,223
Year ended September 26, 2021	1,728	197	1	1,926
Year ended September 27, 2020	1,672	60	(4)	1,728

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark one)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended September 26, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________ .

Commission File Number 0-19528

QUALCOMM Incorporated

(Exact name of registrant as specified in its charter)

Delaware	**95-3685934**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
5775 Morehouse Dr., San Diego, California	**92121-1714**
(Address of Principal Executive Offices)	**(Zip Code)**

(858) 587-1121
(Registrant's telephone number, including area code)

	Title of Each Class
Securities registered pursuant to section 12(b) of the Act:	Common stock, $0.0001 par value

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer	☐	Smaller reporting company	☐	Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C.7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant at March 26, 2021 (the last business day of the registrant's most recently completed second fiscal quarter) was $149.9 billion, based upon the closing price of the registrant's common stock on that date as reported on the NASDAQ Global Select Market.

The number of shares outstanding of the registrant's common stock was 1,120 million at November 1, 2021.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Definitive Proxy Statement for its 2022 Annual Meeting of Stockholders, to be filed with the Commission subsequent to the date hereof, are incorporated by reference into Part III of this Report where indicated.

QUALCOMM Incorporated
Form 10-K
For the Fiscal Year Ended September 26, 2021
Index

Risk Factors Summary:

Our business is subject to numerous risks and uncertainties, including those described in "Part I, Item 1A, Risk Factors" of this Annual Report. These risks include, but are not limited to, the following:

RISKS RELATED TO THE CORONAVIRUS (COVID-19) PANDEMIC

- *The coronavirus (COVID-19) pandemic had an adverse effect on our business and results of operations, and may continue to impact us in the future.*

RISKS RELATED TO OUR OPERATING BUSINESSES

- *We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected.*
- *Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products).*
- *A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.*

RISKS RELATED TO NEW INITIATIVES

- *Our growth depends in part on our ability to extend our technologies and products into new and expanded product areas, and industries and applications beyond mobile handsets. Our research, development and other investments in these new and expanded product areas, industries and applications, and related technologies and products, as well as in our existing technologies and products, and new technologies, may not generate operating income or contribute to future results of operations that meet our expectations.*
- *We may engage in acquisitions and other strategic transactions or make investments, or be unable to consummate planned strategic acquisitions, which could adversely affect our results of operations or fail to enhance stockholder value.*

RISKS RELATED TO SUPPLY AND MANUFACTURING

- *We depend on a limited number of third-party suppliers for the procurement, manufacture, assembly and testing of our products manufactured in a fabless production model. If we fail to execute supply strategies that provide supply assurance, technology leadership and reasonable margins, our business and results of operations may be harmed. We are also subject to order and shipment uncertainties that could negatively impact our results of operations.*
- *There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model; environmental compliance and liability; impacts related to climate change; exposure to natural disasters, health crises and cyber-attacks; timely supply of equipment and materials; and various manufacturing issues.*

RISKS RELATED TO CYBERSECURITY OR MISAPPROPRIATION OF OUR CRITICAL INFORMATION

- *Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information.*

RISKS RELATED TO HUMAN CAPITAL MANAGEMENT

- *We may not be able to attract and retain qualified employees, and our attempts to fully reopen our offices and operate under a hybrid working environment may not be successful.*

RISKS SPECIFIC TO OUR LICENSING BUSINESS

- *The continued and future success of our licensing programs requires us to continue to evolve our patent portfolio and to renew or renegotiate license agreements that are expiring.*
- *Efforts by some original equipment manufacturers (OEMs) to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial*

resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business.

- *Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations.*

RISKS RELATED TO REGULATORY AND LEGAL CHALLENGES

- *Our business may suffer as a result of adverse rulings in governmental investigations or proceedings.*

RISKS RELATED TO INDUSTRY DYNAMICS AND COMPETITION

- *Our revenues depend on our customers' and licensees' sales of products and services based on CDMA, OFDMA and other communications technologies, including 5G, and customer demand for our products based on these technologies.*
- *Our industry is subject to intense competition in an environment of rapid technological change. Our success depends in part on our ability to adapt to such change and compete effectively; and such change and competition could result in decreased demand for our products and technologies or declining average selling prices for our products or those of our customers or licensees.*

RISKS RELATED TO PRODUCT DEFECTS OR SECURITY VULNERABILITIES

- *Failures in our products, or in the products of our customers or licensees, including those resulting from security vulnerabilities, defects or errors, could harm our business.*

RISKS RELATED TO INTELLECTUAL PROPERTY

- *The enforcement and protection of our intellectual property may be expensive, could fail to prevent misappropriation or unauthorized use of our intellectual property, could result in the loss of our ability to enforce one or more patents, and could be adversely affected by changes in patent laws, by laws in certain foreign jurisdictions that may not effectively protect our intellectual property and by ineffective enforcement of laws in such jurisdictions.*
- *Claims by other companies that we infringe their intellectual property could adversely affect our business.*
- *Our use of open source software may harm our business.*

GENERAL RISK FACTORS

- *We operate in the highly cyclical semiconductor industry, which is subject to significant downturns. We are also susceptible to declines in global, regional and local economic conditions generally. Our stock price and financial results are subject to substantial quarterly and annual fluctuations due to these dynamics, among others.*
- *Our business may suffer due to the impact of, or our failure to comply with, the various existing, new or amended laws, regulations, policies or standards to which we are subject.*
- *There are risks associated with our debt.*
- *Tax liabilities could adversely affect our results of operations.*

TRADEMARKS

Qualcomm, Snapdragon, Hexagon, Adreno, Smart Transmit and Wireless Reach are trademarks or registered trademarks of Qualcomm Incorporated. Bluetooth is a registered trademark of Bluetooth SIG, Inc.

Other products and brand names may be trademarks or registered trademarks of their respective owners.

In this Annual Report, the words “Qualcomm,” “we,” “our,” “ours” and “us” refer only to QUALCOMM Incorporated and its subsidiaries and not any other person or entity. This Annual Report (including but not limited to the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations”) contains forward-looking statements. Words such as “expects,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” “estimates,” “may,” “will,” “would” and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report. Additionally, statements concerning future matters such as our future business, prospects, results of operations, financial condition or research and development or technology investments; new or enhanced products, services or technologies; emerging industries or business models; design wins or product launches; industry, market or technology trends, dynamics or transitions, such as the transition to 5G; potential impacts of the COVID-19 pandemic, legal or regulatory matters, U.S./China trade or national security tensions, vertical integration by our customers; competition; and other statements regarding matters that are not historical are also forward-looking statements.

Although forward-looking statements in this Annual Report reflect our good faith judgment, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks and uncertainties and actual results and outcomes may differ materially from the results and outcomes discussed in or anticipated by the forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include without limitation those discussed under “Part I, Item 1A. Risk Factors” below, as well as those discussed elsewhere in this Annual Report. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report. Readers are urged to carefully review and consider the various disclosures made in this Annual Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

PART I

Item 1. Business

We incorporated in California in 1985 and reincorporated in Delaware in 1991. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. Our 52-week fiscal years consist of four equal fiscal quarters of 13 weeks each, and our 53-week fiscal years consist of three 13-week fiscal quarters and one 14-week fiscal quarter. The financial results for our 53-week fiscal years and our 14-week fiscal quarters will not be exactly comparable to our 52-week fiscal years and our 13-week fiscal quarters. The fiscal years ended September 26, 2021, September 27, 2020 and September 29, 2019 included 52 weeks.

Overview

We are a global leader in the development and commercialization of foundational technologies for the wireless industry. Our technologies and products are used in mobile devices and other wireless products, and are sold across industries and applications beyond mobile handsets, including automotive and the internet of things (IoT) (which includes the industries and applications of consumer, industrial and edge networking), among others. Our inventions have helped power the growth in smartphones, which have connected billions of people. We are a leader in 3G (third generation), 4G (fourth generation) and 5G (fifth generation) wireless technologies. We derive revenues principally from sales of integrated circuit products, including our Snapdragon® family of highly-integrated, system-based solutions, and licensing of our intellectual property, including patents and other rights.

The foundational technologies we invent help power the modern mobile experience, impacting how the world connects, computes and communicates. We share these inventions broadly through our licensing program, enabling wide ecosystem access to technologies at the core of mobile innovation, and through the sale of our wireless integrated circuit platforms (also known as integrated circuit products, chips or chipsets) and other products. We collaborate across the ecosystem, including manufacturers, operators, developers, system integrators, cloud providers, tool vendors, service providers, governments and industry standards organizations, to enable a global environment to drive continued progress and growth.

We have a long history of driving innovation. We have played and continue to play a leading role in developing system level inventions that serve as the foundation for 3G, 4G and 5G wireless technologies. This includes technologies such as the CDMA (Code Division Multiple Access) and OFDMA (Orthogonal Frequency Division Multiple Access) families of technologies, with the latter encompassing LTE (Long Term Evolution) and 5G NR (New Radio), which are the primary digital technologies currently used to transmit voice or data over radio waves using a public or private cellular wireless network.

We own significant intellectual property, including patents, patent applications and trade secrets, applicable to products that implement any version of CDMA and/or OFDMA technologies. Companies in the mobile industry generally recognize that any company seeking to develop, manufacture and/or sell devices or infrastructure equipment that use CDMA-based and/or OFDMA-based technologies will require a license or other rights to use our patents. We also develop and commercialize numerous other key technologies used in mobile and other wireless devices, and we own substantial intellectual property related to these technologies. Some of these inventions are contributed to and commercialized as industry standards, such as for certain video and audio codecs, Wi-Fi, GPS (Global Positioning System) and Bluetooth®. We have also developed other technologies that are used by wireless devices that are not related to industry standards, such as operating systems, user interfaces, graphics and camera processing functionality, RF (radio frequency), RFFE (radio frequency front-end) and antenna designs, artificial intelligence (AI) and machine learning techniques and application processor architectures. Our patents cover a wide range of technologies across the entire wireless system (including wireless devices and network infrastructure equipment), not just the portion of such patented technologies incorporated into chipsets.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on 3G/4G/5G and other technologies, including RFFE, for use in mobile devices, automotive systems for telematics, connectivity and digital cockpit (also known as infotainment) and IoT including wireless networks, broadband gateway equipment, consumer electronic devices and industrial devices. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including QGOV (Qualcomm Government Technologies) and our cloud AI inference processing initiative and other technology and service initiatives.

Industry Trends

As the largest technology platform in the world, mobile has transformed the way we connect, compute and communicate. Advanced connectivity and high-performance, low-power computing technologies from mobile are also impacting industries beyond wireless, empowering new services, new business models and new ways to engage and interact with customers. Our breakthrough inventions, along with our flexible and transparent licensing program, have been integral to the growth and evolution of the mobile industry.

Advancing Connectivity. 3G technology introduced the world to the potential of the mobile internet, and the ability to access the internet virtually anytime and anywhere. 4G brought mobile broadband speeds that helped fuel the smartphone era, forever changing the way we work, live and connect with others. 4G has become the foundational technology to many of the applications and services used today, including e-commerce, video streaming, video calling, social media and gaming.

Building on foundational innovations developed for 3G and 4G, the mobile industry is quickly moving to 5G technology. Beginning with the Release 15 specification issued by 3GPP (3rd Generation Partnership Project), an organization that develops technical specifications, 5G is designed to support multi-gigabit data rates, low latency and greater capacity than previous generations of mobile technology to enable enhanced mobile broadband experiences, including ultra-high definition (4K) video streaming and sharing, near-instantaneous access to cloud services, immersive cloud gaming and extended reality (XR), which includes augmented reality (AR), virtual reality (VR) and mixed reality (MR). 5G's performance and capacity improvements are also enabling operators to offer new consumer and enterprise services while also reducing their operating costs.

Although 5G networks are being deployed at a faster pace as compared to the transition from 3G to 4G technologies, as with previous generations of mobile networks, it will take time. Since the first commercial 5G networks were launched in April of 2019, 180 operators in more than 70 countries have commercially launched 5G, with more than 280 additional operators investing to deploy the technology as of September 30, 2021 (GSA, October 2021). Most 5G devices include multimode support for 3G, 4G and Wi-Fi technologies, enabling service continuity where 5G has yet to be deployed. They also allow mobile operators to utilize existing 3G and/or 4G network infrastructure, enabling them to roll out 5G services over time, while also helping to maximize previous generation equipment investments. As of September 30, 2021, there were approximately 7.0 billion 3G/4G/5G connections globally, representing 85% of total mobile connections (GSMA Intelligence, November 2021). By 2025, global 3G/4G/5G connections are projected to reach 8.4 billion, with approximately 86% of these connections in emerging regions and China (GSMA Intelligence, November 2021).

Consumer Demand in Smartphones. From October 2020 through September 2021, approximately 1.4 billion smartphones are estimated to have shipped globally, representing a year-over-year increase of approximately 8%, primarily driven by a recovery from the impacts of the coronavirus (COVID-19) pandemic, which negatively impacted consumer demand for smartphones (IDC, Mobile Phone Tracker, 2021Q2). Smartphone shipments in calendar 2022 are expected to increase by approximately 3% year-over-year (IDC, Mobile Phone Tracker, 2021Q2), reflecting modest growth in emerging regions. We estimate that 5G smartphone shipments will be between 500 and 550 million in calendar 2021, more than doubling compared to the prior year. Looking beyond 2022, we expect modest smartphone growth in emerging regions to continue along with relatively flat demand in developed regions.

Consumer demand for new experiences, combined with the needs of mobile operators and device manufacturers to provide differentiated features and services, is driving continued innovation within the smartphone across connectivity, processing, AI, multimedia, imaging, audio and more. As a result, the smartphone continues to be the go-to device for social networking, music and video streaming, photography and video capture, e-commerce, gaming, email, web browsing and more. 5G enables these experiences to be more immersive, intuitive and interactive.

Transforming Other Industries: Automotive. The automotive industry continues to adopt advanced connectivity and compute technologies from mobile. According to analyst data, more than 70% of new vehicles sold in 2027 are projected to have embedded cellular connectivity, as compared to 55% in 2020 (Strategy Analytics, October 2021), which includes growth in 5G connectivity.

Digitalization of the automotive cockpit continues to transform the in-vehicle experience, enabling greater personalization of content and settings for both drivers and passengers as automakers respond to growing interest from consumers to bring their digital lifestyles into the vehicle. Car-to-cloud platform solutions are helping automakers improve cost efficiencies, create new service opportunities throughout the lifecycle of a vehicle with over-the-air (OTA) update capabilities and receive valuable vehicle and usage analytics. High-performance, low-power computing technologies from mobile are being used to improve advanced driver assistance systems (ADAS) features and will continue progression towards supporting higher levels of automation and safety.

Transforming Other Industries: IoT. Demand for connected devices beyond smartphones continues to grow at a rapid pace across consumer, edge networking and industrial applications, in part due to the expanded use cases enabled by 5G technologies. The installed base of IoT devices, which includes everything from wearables to industrial handhelds to gateways, is projected to more than double between 2021 and 2025 to over 27 billion (IoT Analytics, October 2021). The growth in IoT devices is a catalyst in driving demand in edge networking platforms.

Trends such as remote working, distance learning and telehealth have also helped accelerate the adoption of fast, reliable wireless technologies and driven the demand for connected devices and networking equipment. We expect many of these trends to continue well into the future. According to survey data, 79% of executives plan to allow employees to continue to work remotely at least part time (WeWork/Workplace Intelligence, April 2021), and over 70% of employees want flexible remote work options to remain in place (Microsoft, March 2021). In the United States alone, the virtual care market is expected to grow at a compound annual growth rate of 40% through 2025 (Frost & Sullivan, March 2021), signaling projected demand for remote connectivity.

Consumer. Consumer IoT demand is being fueled by the adoption of the latest mobile technologies in consumer electronics products, including personal computing (e.g., tablets and personal computers), connected audio (e.g., wireless earbuds, speakers and soundbars), wearables (e.g., smart watches and XR) and others (e.g., camera and video collaboration, exercise equipment and home appliances). Connectivity brought to these devices enables new services, applications and experiences.

Edge Networking. Growth in demand for connected devices, along with advances in wireless technology, are driving increased demand for edge networking products (including mobile broadband and wireless access points). 5G brings a broadband connection to the home via wireless technologies that allows for the delivery of high-speed, low-latency connections, enabling operators to replace traditional "last-mile" wired broadband connections. Advances in Wi-Fi alongside 5G technologies are driving consumer and enterprise demand for the latest Wi-Fi 6 access point technologies that leverage increased network speed, capacity and efficiency to support the increased number of connected devices at home and at work.

Industrial. The digital transformation happening across industries, which is being driven by the adoption of mobile technologies, is fueling the growth of and new use cases for industrial IoT. Central to this transformation is the combination of connectivity, computing, on-device AI and big data that brings real time data and insights that are helping companies in industries such as retail, transportation, logistics and asset tracking and utilities gain new knowledge and insights about their products and services, manufacturing processes and more, which will help drive efficiencies and transform the way companies operate.

Wireless Technologies Overview

The worldwide demand in the use of wireless devices and for data services and applications requires continuous innovation to improve the user experiences, support new services, increase network capacity, make use of different frequency bands and allow for dense network deployments. To meet these requirements, different wireless communications technologies continue to evolve. We have a long history of investing heavily in research and development and have developed foundational technologies that help drive the continued evolution of the wireless industry, including CDMA and OFDMA. As a result, we have developed and acquired (and continue to develop and acquire) significant related intellectual property. This intellectual property has been incorporated into the most widely accepted and deployed cellular wireless communications technology standards, and we have licensed it to several hundred licensees, including all the leading handset manufacturers.

Cellular Wireless Technologies. Relevant cellular wireless technologies can be grouped into the following categories.

CDMA-based. CDMA-based technologies are characterized by their access method allowing several users to share the same frequency and time by allocating different orthogonal codes to individual users. Most of the CDMA-based technologies are classified as 3G technology.

A number of variants of CDMA-based technologies have been deployed around the world, in particular CDMA2000, EV-DO (Evolution Data Optimized), WCDMA (Wideband CDMA) and TD-SCDMA (Time Division-Synchronous CDMA, which was deployed exclusively in China). CDMA-based technologies provide vastly improved capacity for voice and low-rate data services as compared to analog technologies and significant improvements over earlier technologies (e.g., 2G technology).

As of September 30, 2021, there were approximately 1.7 billion CDMA-based connections worldwide, representing approximately 21% of total cellular connections, down from 23% as of September 30, 2020 as consumers migrate to OFDMA-based technologies (GSMA Intelligence, November 2021).

OFDMA-based. OFDMA-based technologies are characterized by their access method allowing several users to share the same frequency band and time by allocating different subcarriers to individual users. Most of the OFDMA-based technologies deployed prior to 2020 are classified as 4G technology. 5G heavily leverages OFDMA-based technologies. 3GPP developed the 4G system through the specification of the radio component (LTE) and the core network component (Enhanced Packet Core or EPC). Similarly, 3GPP has developed the 5G system through the specification of the radio component (NR) and the core network component (5G Core or 5GC). Unlike 4G that has fixed Orthogonal Frequency Division Multiplexing (OFDM) parameterization, 5G has multiple OFDM parameterizations to address a wide range of spectrum and use cases. We continue to play a significant role in the further development of LTE-based technologies, such as Narrowband IoT (NB-IoT), enhanced Machine Type Communications (eMTC) and Enhanced TV broadcast (EnTV).

LTE is incorporated in 3GPP specifications beginning with Release 8 and uses OFDMA in the downlink and single carrier FDMA (Frequency Division Multiple Access) in the uplink. LTE has two modes, FDD (Frequency Division Duplex) and TDD (Time Division Duplex) to support paired and unpaired spectrum, respectively, and continues to evolve as 3GPP defines new specifications. The principal benefit of LTE is its ability to leverage a wide range of spectrum (bandwidths of up to 20 MHz or more through aggregation). LTE is designed to seamlessly interwork with 3G technologies through multimode devices.

LTE Advanced brings many more enhancements, including carrier aggregation, advanced multi-antenna techniques and optimizations for small cells. Apart from improving the performance of existing networks, there are also enhancements under the umbrella of LTE Advanced Pro, including LTE Direct for proximity-based device-to-device discovery, improved LTE broadcast, optimizations of narrowband communications designed for IoT (known as eMTC and NB-IoT) and the ability to use LTE Advanced in unlicensed spectrum (LTE Unlicensed), as well as in shared spectrum bands in various regions, such as the Citizens Broadband Radio Service (CBRS) in the United States. There are multiple options for deploying LTE Unlicensed for different deployment scenarios.

- LAA (Licensed Assisted Access), introduced as part of 3GPP Release 13, aggregates unlicensed and licensed spectrum in the downlink and is being deployed globally by mobile operators. LAA is a key technology for many operators with limited licensed spectrum to deliver Gigabit LTE speeds.
- eLAA (enhanced LAA), introduced as part of 3GPP Release 14, is an evolution of LAA. eLAA enables aggregation of unlicensed and licensed spectrum in the uplink.

Beginning with Release 14, 3GPP specifications provide enhancements specifically for C-V2X (cellular vehicle-to-everything), which includes both direct communication (vehicle-to-vehicle, vehicle-to-infrastructure and vehicle-to-pedestrian) in dedicated spectrum that is independent of a cellular network and cellular communications with networks in traditional mobile broadband licensed spectrum.

As of September 30, 2021, there were approximately 4.7 billion global LTE connections worldwide, representing approximately 58% of total cellular connections, up from 56% as of September 30, 2020 (GSMA Intelligence, November 2021).

The wireless industry is actively developing and commercializing 5G technologies. Commercial 5G network deployments and device launches began in calendar 2019, and we expect that additional deployments and device launches will occur as more operators and geographic regions launch 5G services. Many of our inventions at the core of 3G and 4G serve as foundational technologies for 5G. 5G is designed to transform the role of wireless technologies and already incorporates advancements on 3G/4G features available today, including device-to-device capabilities and the use of all different types of spectrum (including licensed, unlicensed and shared spectrum). We continue to play a significant role in driving advancements in 5G, including contributing to 3GPP standardization activities that are defining the continued evolution of 5G NR and 5GC standards.

The first global set of 5G standards is incorporated in 3GPP specifications starting from Release 15, which was initially completed in March 2018. Release 15 enables different architecture deployment choices of 5G networks while sharing the same radio access technology. This is due to 5G's ability to target diverse services with very different technical requirements (from enhanced mobile broadband to massive IoT to mission critical services), its utilization of diverse types of spectrum (from the low bands to millimeter wave (mmWave) bands) and its ability to support diverse types of deployment scenarios. Predominant technological components of 5G include the ability to address ultra-reliable, low-latency communication, new channel coding schemes to efficiently support large data blocks, MIMO (multiple input, multiple output) to increase coverage and network capacity and mobile mmWave to increase the data rate offered to users. 5G uses OFDMA in the downlink and either OFDMA or single carrier FDMA in the uplink depending on the use case. Like 3G and 4G, 5G supports carrier aggregation across spectrum bands, across FDD and TDD and across licensed and unlicensed spectrum (starting with Release 16), and 5G also supports dual connectivity across 4G and 5G. A key benefit of 5G is its ability to take advantage of very wide channel bandwidth (i.e., up to 100 MHz per component carrier for sub-6 and up to 400MHz per component carrier for mmWave), compared to LTE's 20 MHz maximum bandwidth, which requires carrier aggregation to combine spectrum beyond 20 MHz. As with previous cellular generations, 5G is designed to support seamless compatibility with 3G/4G technologies through multimode devices.

5G is the first generation of cellular wireless communication systems to use transmissions at mmWave bands, which creates certain challenges including coverage limitations and blockages, heightened costs and power constraints. In order to address these challenges, we have been a leader in designing RFFE modules and RF filter products which, when paired with our modems, provide a comprehensive 5G modem-to-antenna solution. Our RFFE modules and RF filter products use adaptive beamforming (which spatially concentrates radio energy in a given beam direction to extend the range) and enable the efficient tracking and switching of beams in accordance with varying radio conditions. mmWave deployments rely on small cells (low-powered cellular base stations typically used for increased system capacity and which may have already incorporated Gigabit LTE) to allow for faster, more reliable mobile service with transmissions at mmWave bands. 3GPP has so far defined six mmWave bands. Furthermore, mmWave beam management enhancements were defined in Release 16 with more anticipated in Release 17 (expected to be initially completed in 2022).

Release 16 not only introduced enhancements to 5G mobile broadband experiences (e.g., more capacity, improved coverage, mobility and better device power efficiency), but also expanded 5G technologies into new use cases and industries. For example, to better enable new industrial IoT use cases, such as factory automation, Release 16 added support for private 5G networks, efficient wireless Ethernet over 5G, 5G Time-Sensitive Networking (TSN) and further enhanced ultra-reliable, low latency communications. Release 16 also supports different spectrum types by expanding 5G into unlicensed spectrum with 5G NR Unlicensed (NR-U). Release 16 NR-U focused on sub-7GHz operation (commonly referred to as sub-6, sub-7 or Frequency Range 1), specifically 5GHz and 6GHz bands, and Release 17 will expand NR-U to support higher bands such as 60GHz. High-precision positioning was another focus area in Release 16. Accurate device positioning is a key enabler for many applications, such as public safety and indoor navigation. Release 16 added new capabilities for 5G positioning, supporting techniques such as multi-cell roundtrip time, angle of arrival/departure and time difference of arrival. Release 16 addressed the growing needs of low-power, wide-area IoT use cases by allowing in-band deployments of NB-IoT and eMTC in 5G carriers, as well as supporting these low-complexity IoT technologies with the new 5G core network. Additionally, to make mmWave densification more cost efficient, Release 16 introduced integrated access and backhaul that allows a base station to provide both wireless access for devices and wireless backhaul connectivity, thereby eliminating the need for a wired backhaul.

Other (Non-Cellular) Wireless Technologies. There are other, non-cellular wireless technologies that have also been broadly adopted.

Wireless Local Area Networks. Wireless Local Area Networks (WLAN), such as Wi-Fi, link two or more nearby devices wirelessly and usually provide connectivity through an access point. We are actively involved in innovative programs developed in the context of the Wi-Fi Alliance, a non-profit organization that drives global Wi-Fi adoption and evolution. Wi-Fi systems are based primarily on standards developed by the Institute of Electrical and Electronics Engineers 802.11 Working Group. Amendments of the 802.11 standard are commonly referred to by the names made popular by the Wi-Fi Alliance (for example, 802.11ax is known as Wi-Fi 6). Wi-Fi 6 adds advanced features such as downlink and uplink OFDMA and uplink multiple-user MIMO. This technology primarily targets connectivity for mobile devices, tablets, laptops and other consumer electronic devices using the 2.4GHz and 5GHz spectrum bands. 1200MHz of new spectrum has been added in the 6GHz band in the United States, Brazil, Canada, South Korea, Saudi Arabia and other countries, which triples the available spectrum for unlicensed technologies, such as Wi-Fi, which can be used by new Wi-Fi 6E devices. Europe has added 480 MHz of spectrum in the 6GHz band for unlicensed operation. For 60GHz mmWave technology, 802.11ay adds wider channel bandwidth and the use of MIMO to the existing 802.11ad (also known as Gigabit Wi-Fi or WiGig) standard. 802.11ah targets sub-1 GHz spectrum. We played a leading role in the development of 802.11ac, 802.11ax, 802.11ay, 802.11ah and 802.11ad, and continue to play a leading role in the evolution of the 802.11 family of standards with the development of the new 802.11be standard, which is expected to be known as Wi-Fi 7. The 802.11be specification is expected to standardize technologies such as Multi-Link Operation, 4K QAM (quadrature amplitude modulation), wider channel bandwidth modes (up to 320 MHz) and low latency enhancements.

Bluetooth. Bluetooth is a wireless personal area network that provides wireless connectivity between devices over short distances ranging from a few centimeters to approximately one hundred meters. Bluetooth technology provides wireless connectivity to a wide range of fixed or mobile consumer electronic devices. Bluetooth functionalities are standardized by the Bluetooth Special Interest Group in various versions of the specification (from 1.0 to 5.3), which include different functionalities, such as enhanced data rate, low energy and mesh technologies. We are a leading contributor to Bluetooth technologies in the areas of mobile devices and audio and mesh technologies.

Location Positioning Technologies. Location positioning technologies continue to evolve in order to deliver an enhanced commercial location experience and comply with new mandates on location for E911 (enhanced 911) calls. We are a key developer of the Assisted-GPS (A-GPS), Assisted Global Navigation Satellite System (A-GNSS) and WLAN positioning technologies used in most cellular handsets today. For uses requiring the best reliability and accuracy for E911 services and navigational based services, A-GPS, A-GNSS and WLAN provide leading-edge solutions. We continue to invest in the standardization and productization of many 4G- and 5G-based positioning capabilities, including in 3GPP Release 16.

The industry continues to evolve to support additional inputs for improving the location experience. Our products and intellectual property now support multiple constellations for A-GNSS, including: GPS, GLONASS, Galileo, NavIC and BeiDou; Wi-Fi-based and Bluetooth-based positioning for WLAN, including Wi-Fi RSSI (received signal strength indication) and Wi-Fi RTT (round-trip time) signals for indoor location; observed time difference of arrival positioning for LTE access (e.g., in rural and indoor areas); and third-party inertial sensors. The combination of these different location solutions is used to ensure accurate location availability in all areas.

Other Significant Technologies used in Cellular and Certain Consumer Electronic Devices and Networks. We have played and continue to play a leading role in developing and/or have acquired many of the other technologies used across the wireless system, including in cellular handsets and certain other consumer electronic devices and networks:

- on-device AI features, including machine learning platforms and the application of AI and machine learning techniques to edge computing and other use cases;
- graphics and display processing functionality;
- video coding based on the HEVC (High Efficiency Video Coding) standard, which is being deployed to support 4K video and immersive media content, the next generation VVC (Versatile Video Coding) and the MPEG-5 EVC (Essential Video Coding) standard, which is designed to power the creation and consumption of rich digital media experiences;
- audio coding, including EVS (enhanced voice services) and MPEG-H 3D Audio;
- the latest version of 3GPP's codec for multimedia use and for voice/speech use;
- camera functions;
- operating system and user interface features;
- XR platform features such as 6DoF (six-degrees of freedom) head tracking and controller capabilities, 3D Reconstruction, 3D audio and video pass-through, and embedded cellular connectivity for new types of user experiences;
- security and content protection systems for enhanced device security without compromising the user experience and ultrasonic fingerprint readers for single touch authentication;
- volatile (LP-DDR4, 5) and non-volatile (eMMC) memory and related controllers;
- fast charging features, enabling devices to charge quickly, safely and efficiently;
- Qualcomm® Smart Transmit™ technology, a modem-to-antenna technology that optimizes data speeds while complying with RF transmit power limits;
- power management systems for improved battery life and device charging; and
- System on Chip (SoC) architecture with heterogeneous computing features, which uses different types of specialized engines (Graphics Processing Unit (GPU)) to enable high performance and low-power computing and other optimization techniques.

Acquisitions

We make strategic investments and acquisitions to: open new opportunities for our technologies, supporting the design and introduction of new products and services (or enhancing existing products or services); obtain development resources; grow our patent portfolio; or pursue new businesses as part of our strategic plan. Information regarding acquisitions is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 9. Acquisitions” and “Notes to Consolidated Financial Statements, Note 12. Subsequent Events.”

Operating Segments

We have three reportable segments. We conduct business primarily through QCT and QTL, while QSI makes strategic investments. Additional information regarding our operating segments is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 8. Segment Information.”

QCT Segment. QCT is a leading developer and supplier of integrated circuits and system software based on 3G/4G/5G and other technologies for use in wireless voice and data communications, networking, computing, multimedia and GPS products. QCT's integrated circuit products are sold and its system software is licensed to manufacturers that use our products in a broad range of devices, from low-tier, entry-level devices primarily for emerging regions to premium-tier devices, including but not limited to mobile devices (primarily smartphones), tablets, laptops, XR headsets, data modules, gaming devices, voice and music devices, wearable devices, wireless access points and routers, broadband gateway equipment, data cards and infrastructure equipment, sensor hubs and other industrial equipment and automotive systems for telematics, connectivity and digital cockpit. Our 3G/4G/5G modem roadmap delivers the latest network technologies across multiple product tiers and devices. This roadmap is the result of extensive collaboration with manufacturers, operators, developers, systems integrators, cloud providers, tool vendors, service providers, governments and industry standards organizations, as well as our years of research into emerging network standards and the development of integrated circuits, that takes advantage of these new standards, while maintaining backward compatibility with existing standards. We have leveraged and expect to continue to leverage the foundational technologies initially developed and commercialized for use in mobile handset devices, such as our core baseband modem and processor technologies and our other wireless connectivity products in Wi-Fi, Bluetooth and precise positioning technologies, to extend into new product categories, industries and applications beyond mobile handsets, such as automotive and IoT (which includes the industries and applications of consumer, industrial and edge networking).

The Snapdragon family of highly integrated, system-based solutions include the Snapdragon mobile, compute, sound and automotive platforms. Each platform consists of application processors and wireless connectivity capabilities, including our cellular modem that provides core baseband modem functionality for voice and data communications, non-cellular wireless connectivity (such as Wi-Fi and Bluetooth) and global positioning functions. Our Snapdragon application processor functions include CPU, security, graphics, display, audio, video, camera and AI. Our CPUs are designed based on the ARM architecture and are designed to deliver high levels of compute performance with optimized power consumption. Our Qualcomm® Hexagon™ processors are designed to support a variety of signal processing applications, including AI, audio and sensor processing. Our Qualcomm® Adreno™ graphics processing units are designed to deliver high quality graphics performance for visually rich 3D gaming and user interfaces. In addition to the highly integrated core SoC, we also design and supply supporting components, including the RF transceiver, PM (power management), audio, codecs, speaker amps and additional wireless connectivity integrated circuits. These supporting components, in addition to our cellular modems and application processors comprising our core SoC, are also sold as individual components. The combination of the Snapdragon SoC, system software and supporting components provide an overall platform with optimized performance and efficiency, enabling manufacturers to design and deliver powerful, slim and power-efficient devices ready for integration with the complex cellular networks worldwide.

Our portfolio of RF products includes Qualcomm® RFFE components that are designed to simplify the RF design for 5G front-end, LTE multimode and multiband mobile devices, including sub-6 GHz and mmWave devices, to reduce power consumption and to improve radio performance. We provide comprehensive RFFE product offerings with system level performance from the modem and transceiver to the antenna that include complex 4G/5G transmit and receive modules, power tracking, tuning systems, multimode-multiband power amplification, low noise amplifiers and mmWave antenna solutions, in addition to discrete filtering products, for devices and applications across the mobile handsets, automotive and IoT industries. We have also integrated our Snapdragon platform with our RFFE components to create our Snapdragon 5G modem-RF products, the world's first commercial modem-to-antenna 5G solution designed to maximize data speeds and performance, support superior call connectivity and coverage and extend battery life.

Our wireless connectivity products also consist of integrated circuits and system software for Wi-Fi, Bluetooth and frequency modulation (FM), as well as technologies that support location data and services, including GPS, GLONASS, Galileo, NavIC and BeiDou. Our wireless connectivity products provide additional connectivity for mobile devices, tablets, laptops, XR headsets, voice and music devices, wearable devices, automotive telematics, digital cockpit, utility meters, logistic trackers and industrial sensors, in addition to other IoT devices and applications. QCT also offers standalone Wi-Fi, Bluetooth, fingerprint sensor, applications processor and Ethernet products utilized within these devices and systems. Our networking products include Wi-Fi, Ethernet and Powerline chips, network processors, wireless access points and routers, broadband gateway equipment and software. These products help enable home and business networks to support the growing number of connected devices, digital media and data services.

Other than for certain of our RFFE modules and RF filter products, QCT utilizes a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Therefore, we primarily rely on third parties to perform the manufacturing and assembly, and most of the testing, of our integrated circuits based primarily on our proprietary designs and test programs. Our suppliers also are responsible for the procurement of most of the raw materials used in the production of our integrated circuits. Integrated circuits are die cut from silicon wafers that have completed the package assembly and test manufacturing processes. The semiconductor package supports the electrical contacts that connect the integrated circuit to a circuit board. Die cut from silicon wafers are the essential components of all of our integrated circuits and a significant portion of the total integrated circuit cost. We employ both turnkey and two-stage manufacturing models to purchase our integrated circuits. Under the turnkey model, our foundry suppliers are responsible for delivering fully assembled and tested integrated circuits. Under the two-stage manufacturing model, we purchase die in singular or wafer form from semiconductor manufacturing foundries and contract with separate third parties for manufacturing services such as wafer bump, probe, assembly and the majority of our final test requirements. The primary foundry suppliers for our various digital, analog/mixed-signal, RF and PM integrated circuits are Global Foundries, Samsung Electronics, Semiconductor Manufacturing International Corporation (SMIC), Taiwan Semiconductor Manufacturing Company (TSMC) and United Microelectronics. The primary semiconductor assembly and test suppliers are Advanced Semiconductor Engineering, Amkor Technology, Siliconware Precision Industries and STATSChipPAC. The majority of our foundry and semiconductor assembly and test suppliers are located in the Asia-Pacific region.

QCT primarily uses internal fabrication facilities to manufacture certain RFFE modules and RF filter products, and its manufacturing operations consist of front-end and back-end processes. The front-end processes primarily take place at manufacturing facilities located in Germany and Singapore and involve the imprinting of substrate wafers with the structure and circuitry required for the products to function (also known as wafer fabrication). The back-end processes include the assembly, packaging and test of RFFE modules and RF filter products and their preparation for distribution. The back-end manufacturing facilities are located in China and Singapore.

QCT’s sales are primarily made through a purchase order and order confirmation process for delivery of products. QCT generally allows customers to reschedule delivery dates within a defined time frame and to cancel orders prior to shipment with or without payment of a penalty, depending on when the order is canceled. The industry in which QCT operates is intensely competitive. QCT competes worldwide with a number of U.S. and international designers and manufacturers of semiconductors. As a result of global expansion by foreign and domestic competitors, technological changes, device manufacturer concentrations, limited global supply capacity, vertical integration and the potential for further industry consolidation, we anticipate the industry to remain very competitive. We believe that the principal competitive factors for our products include performance, level of integration, quality, compliance with industry standards, price, time-to-market, system cost, design and engineering capabilities, new product innovation, growth and scaling of distribution channels, desire by certain customers to use multiple suppliers and customer support. QCT also competes in both single-mode and multimode environments against alternative communications technologies. Additional competitive factors exist for QCT product offerings that have expanded into industries and applications beyond mobile handsets, including automotive and IoT. The automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in a significant barrier to entry and may result in increased costs.

QCT's current competitors include, but are not limited to, companies such as Broadcom, MediaTek, Nvidia, NXP Semiconductors, Qorvo, Samsung, Skyworks, Texas Instruments and UNISOC. QCT currently faces competition, which may intensify in the future, from products internally developed by our customers, including some of our largest customers, and from some early-stage companies. Our competitors devote significant amounts of their financial, technical and other resources to develop and market competitive products and, in some cases, to develop and adopt competitive digital communication or signal processing technologies, and those efforts may materially and adversely affect us. Although we have attained a significant position in the wireless industry, many of our current and potential competitors may have advantages over us. These and other risks related to competition are more fully described in the Risk Factors entitled "*Our industry is subject to intense competition in an environment of rapid technological change. Our success depends in part on our ability to adapt to such change and compete effectively; and such change and competition could result in decreased demand for our products and technologies or declining average selling prices for our products or those of our customers or licensees"* and *"Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products)."*

QTL Segment. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale and/or use of certain wireless products, including, without limitation, products implementing CDMA2000, WCDMA, LTE and/or OFDMA-based 5G standards and their derivatives. We grant licenses or otherwise provide rights to use our cellular standard-essential patents (including 3G, 4G and 5G) for both single-mode and multimode devices on a worldwide basis. We also offer licenses to our cellular standard-essential patents together with other Qualcomm patents that may be useful to such licensed products for licensees that desire to obtain the commercial benefits of receiving such broad patent rights from us. While we offer license rights to patents that we do not have a duty or obligation to grant, those rights may be negotiated at our discretion. A significant portion of QTL's licensing revenues is derived from licensees that have entered into license agreements that grant licenses under Qualcomm's cellular standard-essential patents. Our licensees manufacture wireless cellular products such as mobile devices (including handsets), other consumer devices (e.g., tablets and laptops), plug-in end user data modem cards and embedded modules for incorporation into machine-to-machine devices and certain end user products (excluding handsets, tablets and laptops), connected vehicle units and connected vehicle modules used in automobiles, wireless access points, small cell wireless products, infrastructure equipment required to establish and operate a cellular network and equipment to test wireless networks and cellular devices.

Since our founding in 1985, we have focused heavily on technology development and innovation. These efforts have resulted in a leading intellectual property portfolio related to foundational, system level technologies for the wireless industry. We have an extensive portfolio of United States and foreign patents, and we continue to pursue patent applications around the world. Our patents have broad coverage in many countries, including Brazil, China, India, Japan, South Korea, Taiwan, the United States and countries in Europe. A substantial portion of our patents and patent applications relate to digital wireless communications technologies, including patents that are essential or may be important to the commercial implementation of CDMA2000, WCDMA (UMTS), LTE and/or OFDMA-based 5G products. Our patent portfolio is the most widely and extensively licensed in the industry, including more than 150 5G license agreements to date. Additionally, we have a substantial patent portfolio related to key technologies used in communications and other devices and/or related services, some of which were developed in industry standards development organizations. These include certain video codecs, audio codecs, Wi-Fi, memory interfaces, wireless power, GPS and positioning, broadcast and streaming protocols, and short-range communication functionalities, including NFC and Bluetooth. Our patents cover a wide range of technologies across the entire wireless system (including wireless devices and network infrastructure equipment), not just the portion of such patented technologies incorporated into chipsets. Over the years, a number of companies have challenged our patent position, but companies in the mobile communications industry generally recognize that any company seeking to develop, manufacture and/or sell certain wireless products that use CDMA-based and/or OFDMA-based technologies will require a license or other rights to use our patents.

We have licensed or otherwise provided rights to use our patents to hundreds of companies on industry-accepted terms. Our strategy to make our patented technologies broadly available has been a catalyst for industry growth, helping to enable a wide range of companies offering a broad array of wireless products and features while increasing the capabilities of and/or driving down average and low-end selling prices for handsets and other wireless devices. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, encouraging innovative applications, supporting equipment manufacturers with integrated chipset and software products and focusing on improving the efficiency of the airlink for wireless operators, we have helped multimode device capabilities evolve, grow demand and reduce device pricing. 5G network deployments and commercial 3G/4G/5G multimode device sales began in 2019 and have continued. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, we are supporting the global rollout and availability of 5G technology. We believe that 5G will continue to encourage innovative applications through enhanced mobile broadband services with lower latency and multi-gigabit user data speeds and bring more capacity and efficiency to wireless networks.

Upon the initial deployment of OFDMA-based networks, the products implementing such technologies generally have been multimode and implement OFDMA-based and CDMA-based technologies. The licenses granted under our existing license agreements generally cover multimode CDMA/OFDMA (3G/4G/5G) devices, and our licensees are obligated to pay royalties under their license agreements for their sales of such devices.

Standards bodies have been informed that we hold patents that might be essential for all 3G standards that are based on CDMA; patents and pending patent applications that are potentially essential for LTE standards, including FDD and TDD versions; and patents and pending patent applications that are potentially essential for 5G technologies. We have committed to such standards bodies that we will offer to license our essential patents for these standards consistent with our commitments to those bodies. We have made similar commitments with respect to certain other technologies implemented in industry standards.

QTL licensing revenues include royalties and, to a lesser extent, license fees. Licensees pay quarterly royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets, laptops and smartwatches, and which provide for a maximum royalty amount payable per device. For certain non-handset product categories, including automotive, we charge a fixed royalty amount per unit. Revenues generated from royalties are subject to quarterly and annual fluctuations.

The vast majority of QTL revenues have been generated through our licensees' sales of CDMA-based (including, but not limited to WCDMA-based) and OFDMA-based products (including 3G, 3G/4G and 3G/4G/5G multimode devices), such as smartphones and other devices. We have invested and continue to invest in both the acquisition and development of OFDMA technology and intellectual property and have generated the industry leading patent portfolio applicable to LTE, LTE Advanced, LTE Advanced Pro and 5G-NR. Some of our inventions that serve as foundational technologies for 3G and 4G also serve as foundational technologies for 5G. We have invested and continue to invest in the development of 5G and continue to play a significant role in driving advancements of 5G. Nevertheless, we face competition in the development of intellectual property for future generations of digital wireless communications technologies and services.

Separate and apart from licensing manufacturers of wireless devices and network equipment, we have entered into certain arrangements with competitors of our QCT segment. A principal purpose of these arrangements is to provide our QCT segment and the counterparties certain freedom of operation with respect to each party's integrated circuits business. In every case, these agreements expressly reserve the right for QTL to seek royalties from the customers of such integrated circuit suppliers with respect to such suppliers' customers' sales of CDMA-based (including, but not limited to WCDMA-based) and OFDMA-based wireless devices into which such suppliers' integrated circuits are incorporated.

Our license agreements also may provide us with rights to use certain of our licensees' technology and intellectual property to manufacture, sell and/or use certain components (e.g., application-specific integrated circuits) and related software, cellular devices and/or infrastructure equipment.

We have been in the past and are currently subject to certain legal proceedings challenging our patent licensing practices, including those described in this Annual Report under the heading "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies," which may require us to change our patent licensing practices as described more fully herein in "Part I, Item 1A. Risk Factors" under the heading "*Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations.*"

QSI Segment. QSI makes strategic investments primarily through our Qualcomm Ventures arm that are focused on expanding or opening new opportunities for our technologies as well as supporting the design and introduction of new products and services (or enhancing existing products or services). Many of these strategic investments are in early-stage companies in a variety of industries and applications, including, but not limited to, 5G, AI, automotive, consumer, enterprise, cloud and IoT. Investments primarily include non-marketable equity securities and, to a lesser extent, marketable equity securities (the majority of which resulted from initial public offerings of certain non-marketable equity investments) and convertible debt instruments. In addition, QSI segment results include revenues and related costs associated with development contracts with one of our investees. As part of our strategic investment activities, we generally intend to pursue various exit strategies for each of our QSI investments in the foreseeable future.

Other Businesses. Nonreportable segments include our Qualcomm Government Technologies or QGOV business, our cloud AI inference processing initiative and other technology and service initiatives. QGOV provides development and other services and sells related products to U.S. government agencies and their contractors.

Seasonality. Information regarding seasonality is provided in this Annual Report in “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the “Our Business and Operating Segments” section under the heading “Seasonality.”

Corporate Structure

We operate our businesses through our parent company, QUALCOMM Incorporated, and multiple direct and indirect subsidiaries. We have developed our corporate structure in order to address various legal, regulatory, tax, contractual compliance, operational and other matters. Substantially all of our products and services businesses, including QCT, and substantially all of our engineering, research and development functions, are operated by Qualcomm Technologies, Inc. (QTI), a wholly-owned subsidiary of QUALCOMM Incorporated, and QTI's subsidiaries. QTL is operated by QUALCOMM Incorporated, which owns the vast majority of our patent portfolio. Neither QTI nor any of its subsidiaries has any right, power or authority to grant any licenses or other rights under or to any patents owned by QUALCOMM Incorporated.

Revenue Concentrations and Significant Customers

A small number of customers/licensees historically have accounted for a significant portion of our consolidated revenues. In fiscal 2021, revenues from Apple, Samsung and Xiaomi each comprised 10% or more of our consolidated revenues. Additional information regarding revenue concentrations is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies" and "Notes to Consolidated Financial Statements, Note 8. Segment Information."

Research and Development

The wireless communications industry is characterized by rapid technological change, evolving industry standards, frequent new product introductions and, with the use of 5G, the expansion into new industries or applications such as automotive and IoT, requiring a continuous effort to enhance existing products and technologies and to develop new products and technologies. We have significant engineering resources, including engineers with substantial expertise in modem technologies, radio-frequency integrated circuit (RFIC), RFFE, multimedia (camera, video, display, computer vision), advanced SoC, which includes specialized engines, such as CPU and GPU, to enable high performance and low-power computing and other optimization techniques, AI, packaging, and a broad range of other technologies. We expect to continue to invest in research and development in a variety of ways in an effort to extend the demand for our products and technologies and to utilize that research and development in industries and applications beyond mobile handsets (such as automotive and IoT), including continuing the development of new modem and multimedia technologies and other technologies (such as ADAS and XR), developing alternative technologies for certain specialized applications, participating in the formulation of new voice and data communication standards and technologies and assisting in deploying digital voice and data communications networks around the world. Our research and development team has a demonstrated track record of innovation in voice and data communication technologies and application processor technology, among others.

We continue to invest significant resources towards advancements in OFDMA-based technologies and products (including LTE and 5G). We also engage in acquisitions and other transactions, such as joint ventures, to meet certain technology needs, to obtain development resources or open or expand opportunities for our technologies and to support the design and introduction of new products and services (or enhancing existing products and services) for voice and data communications and new industries and applications beyond mobile handsets. We make investments to provide our integrated circuit customers with chipsets designed on leading-edge technology nodes that combine multiple technologies for use in consumer electronic devices (e.g., smartphones, tablets, laptops, voice and music devices, wearable devices, XR devices) and other products (e.g., access points and routers, data cards and infrastructure equipment). In addition to 3G, 4G and 5G technologies, our chipsets support other wireless and wired connectivity technologies, including Wi-Fi, Bluetooth, Ethernet, location positioning and Powerline communication. Our integrated chipsets often include multiple technologies, including advanced multimode modems, application processors and graphics engines, as well as the tools to connect these diverse technologies. We continue to support Android, Windows and other client software environments in our chipsets.

We develop on our own, and with our partners, innovations that are integrated into our product portfolio to further expand the opportunity for wireless communications and enhance the value of our products and services. These innovations are expected to enable our customers to improve the performance or value of their existing services, offer these services more affordably and introduce revenue-generating broadband data services ahead of their competition.

We have research and development centers in various locations throughout the world that support our global development activities and ongoing efforts to develop and/or advance 4G, 5G, RFFE and a broad range of other technologies. We continue to use our substantial engineering resources and expertise to develop new technologies, applications and services and make them available to licensees to help grow the communications industry and generate new or expanded licensing opportunities.

Environmental, Social and Governance (ESG) and Human Capital

For decades, our innovations have helped transform industries, enhance people's lives and address some of society's biggest challenges. With the world becoming increasingly connected, we have a tremendous opportunity to shape a better future. We believe in the power of technology. As such, our corporate responsibility vision is to be a facilitator of innovation for a sustainable world, connected wirelessly.

We have integrated corporate responsibility throughout our business, from our daily operations to our executive leadership and our Board of Directors (Board). The Governance Committee of our Board provides oversight on corporate responsibility matters, including ESG policies, programs and initiatives, and the HR and Compensation Committee of our Board provides oversight on our workforce diversity and inclusion programs and initiatives. Our Corporate Responsibility Leadership Committee, composed of executives and senior management, provides guidance on global corporate responsibility issues. Our Corporate Responsibility Governance Committee implements directives from the Corporate Responsibility Leadership Committee, measures progress on achieving our goals, and reports to management on accomplishments and challenges.

ESG

Our sustained investment in R&D has helped revolutionize the way people connect; our approach to innovation is strategic and purposeful. We understand that the success of our business is fundamentally connected to the well-being of our world. We focus our efforts in four key areas where we believe we can have the biggest impact:

- ***Purposeful Innovation.*** We invent breakthrough technologies by building on our legacy of technology leadership with 5G, which we believe will serve as the technological foundation for connected cars, industrial IoT, smart homes and cities, networking and mobility, among others. Our 5G technology advancements are helping transform industries, like telemedicine and remote education, and driving efficiencies with always-connected devices. We believe that 5G can also help manage and improve the sustainability trajectory of our planet in key areas such as greenhouse gas (GHG) emissions, water use, reduction of pesticides and energy efficiency, while providing an inherently lower CO2 footprint than previous network deployments. Through our Qualcomm® Wireless Reach™ program (Wireless Reach), we work to broaden our impact by bringing advanced wireless technologies to underserved communities around the world. Further, through the Qualcomm Small Business Accelerator Program, we have provided technology and support to U.S.-based small businesses in various industries to help them transition to a mobile-first remote work environment.
- ***Our People.*** We strive to make Qualcomm an inspiring and inclusive workplace to advance the development of leading-edge technologies. Our success is only possible with the hard work and dedication of our employees. We celebrate diversity among our workforce and recognize that our varied backgrounds, experiences and ideas are critical to innovation. We seek to foster inclusive teams and educate and train employees and leaders on the importance of driving diversity. We also engage our global workforce through giving and outreach efforts to support and enrich the communities where we live and work.
- ***STEM Education.*** Science, technology, engineering, and mathematics (STEM) is the foundation for everything we do. It supports the brainpower behind the breakthrough technologies and inventions we bring to life. As technology leaders and a company of inventors, we are committed to providing tomorrow’s workforce with the skills and knowledge to solve global challenges. Our initiatives are designed to promote and improve STEM education and to expand opportunities for underrepresented students.
- ***Responsible Business.*** We strive to integrate responsible and sustainable practices throughout our organization. We continually look for ways to conserve water, minimize energy consumption, lower emissions and reduce waste. We prioritize transparency in our actions and reporting, including reporting on our ESG risks and opportunities using the TCFD (Task Force on Climate-related Financial Disclosures), SASB (Sustainability Accounting Standards Board) and GRI (Global Reporting Initiative) frameworks in our Qualcomm Corporate Responsibility Report (located on our website). Because privacy and cybersecurity are critical for success in the wireless industry, we seek to promote data protection across the mobile ecosystem. Further, we are committed to respecting all internationally recognized human rights and avoiding complicity in any human rights abuse, upholding adherence to our Supplier Code of Conduct in our extended supply chain, being a global leader in ethical business conduct and engaging in discussions to advocate for policies that promote innovation as well as protect and foster new ideas in mobile communications.

2025 Goals. In addition to the human capital goals discussed below, our *2025 Goals* related to corporate responsibility include, among others:

- Reduce our absolute Scope 1 and Scope 2 GHG emissions by 30% from global operations, compared to a 2014 baseline.
- Reduce power consumption by 10% every year in our flagship Snapdragon Mobile Platform products (given equivalent features).
- Ensure 100% of our primary semiconductor manufacturing suppliers are audited every 2-years for conformance to our Supplier Code of Conduct.

Net-Zero Global GHG Emissions Commitment. In addition to our *2025 Goals*, in November 2021, we announced plans to: (1) reduce absolute Scope 1 and 2 global GHG emissions by 50% by 2030 from 2020 base year; (2) reduce absolute Scope 3 global GHG emissions by 25% by 2030 from 2020 base year; and (3) reach net-zero global GHG emissions for Scopes 1, 2 and 3 by 2040.

The foregoing discussion includes information regarding ESG matters that we believe may be of interest to our stockholders generally. We recognize that certain other stakeholders (such as customers, employees and non-governmental organizations), as well as certain of our stockholders, may be interested in more detailed information on these topics. We encourage you to review our most recent Qualcomm Corporate Responsibility Report (located on our website) for more detailed information regarding our Corporate Responsibility and ESG governance, goals, priorities, accomplishments and initiatives; a 5G and sustainability report, Environmental Sustainability and a Greener Economy: The Transformative Role of 5G (also located on our website) for additional information regarding our views on climate change, environmental sustainability and the role of 5G in enabling a more sustainable future; as well as the Corporate Governance section of our most recent Proxy Statement, and our Corporate Governance Principles and Practices (located on our website), for additional information regarding governance matters, including Board and Committee leadership, oversight, roles and responsibilities, and Director independence, tenure, refreshment and diversity. Nothing on our website, including the aforementioned reports, documents or sections thereof, shall be deemed incorporated by reference into this Annual Report.

Human Capital

In order to continue to produce the innovative, breakthrough technologies for which we are known, it is crucial that we continue to attract and retain top talent. To facilitate talent attraction and retention, we strive to make Qualcomm a diverse, inclusive and safe workplace, with opportunities for our employees to grow and develop in their careers, supported by strong compensation, benefits and health and wellness programs and by programs that build connections between our employees and their communities.

At September 26, 2021, we had approximately 45,000 full-time, part-time and temporary employees, the overwhelming majority of which were full-time employees. During fiscal 2021, the number of employees increased by approximately 4,000, primarily due to increases in engineering resources. Our employees are represented by more than 100 self-identified nationalities working in over 150 locations in 33 different countries around the world. Collectively, we speak more than 90 different languages. Our global workforce is highly educated, with the substantial majority of our employees working in engineering or technical roles (many of whom help develop foundational technologies for both our QCT semiconductor business and our QTL licensing business). During fiscal 2021, our voluntary turnover rate was less than 7%, below the technology industry benchmark, which is comprised of certain of our key competitors (Aon, 2021 Salary Increase and Turnover Study - Second Edition, September 2021).

Diversity and Inclusion. We believe that a diverse workforce is critical to our success, and we continue to focus on the hiring, retention and advancement of women and underrepresented populations. Our recent efforts have been focused in three areas: inspiring innovation through an inclusive and diverse culture; expanding our efforts to recruit and hire world-class diverse talent; and identifying strategic partners to accelerate our inclusion and diversity programs.

We have employee networks that enhance our inclusive and diverse culture, including global network groups focused on supporting women, LGBTQ+ employees and employees with disabilities, in addition to U.S.-based employee networks that focus on Black and African American employees, Hispanic and Latinx employees and U.S. military members and veterans.

We continue to recruit technical talent in diverse communities, including by engaging as a high-level sponsor of professional conferences, such as the Grace Hopper Celebration, the Society of Hispanic Professional Engineers National Convention and the National Society of Black Engineers National Convention. We also continue to recruit from a variety of colleges including Hispanic-Serving Institutions, Historically Black Colleges and Universities and Women’s Colleges.

Our continued engagement with organizations that work with diverse communities has been vital to our efforts to increase women and minority representation in our workforce. For example, we partner with AnitaB.org to benchmark our progress and identify promising practices for recruiting, retaining and advancing women technologists and support its research initiatives related to attracting and retaining women and underrepresented minority students in computing majors. We, alongside other top technology companies, helped form the Reboot Representation Tech Coalition, which aims to double the number of Black, Latinx and Native American women receiving computing degrees by 2025. In collaboration with the National Foundation for Autism Research, we started an internship program to welcome those with autism into our Company. Through our collaboration with Disability:IN’s Inclusion Works program, we have increased our ability to address the needs of individuals with disabilities.

We publish our most recent Consolidated EEO-1 reports on our website to provide additional transparency into our efforts to increase underrepresented populations in our workforce.

From a governance perspective, the HR and Compensation Committee of our Board, through its charter, provides oversight of our policies, programs and initiatives focusing on workforce diversity and inclusion.

Health, Safety and Wellness. The success of our business is fundamentally connected to the well-being of our people. Accordingly, we are committed to the health, safety and wellness of our employees. We provide our employees and their families with access to a variety of innovative, flexible and convenient health and wellness programs, including benefits that provide protection and security concerning events that may require time away from work or that impact their financial well-being; that support their physical and mental health by providing tools and resources to help them improve or maintain their health status and encourage engagement in healthy behaviors; and that offer choice where possible so they can customize their benefits to meet their needs and the needs of their families.

In response to the COVID-19 pandemic, in 2020, we implemented significant changes that we determined were in the best interest of our employees, as well as the communities in which we operate, and which comply with government regulations. This included having the vast majority of our employees work from home, while implementing additional safety measures for employees continuing critical on-site work. We introduced our Live+Well, Work+Well program, designed to help cultivate a productive work environment, while also focusing on our employees' wellbeing. We have commenced a phased approach to returning our employees onsite, which included modifications to certain of our existing office locations as we adapt to a hybrid work environment that provides flexibility, while maintaining our strong culture of innovation, collaboration, openness and camaraderie, in addition to a safe working environment for our employees. We continue to monitor the state of the pandemic and gather additional feedback during the reopening of our offices to ensure the continued health, safety and wellness of our employees working onsite.

Compensation and Benefits. We provide robust compensation and benefits programs to help meet the needs of our employees. In addition to salaries, these programs (which vary by country/region) include annual bonuses, stock awards, an employee stock purchase plan, a 401(k) plan, healthcare and insurance benefits, health savings and flexible spending accounts, paid time off, family leave, family care resources, flexible work schedules, adoption and surrogacy assistance, employee assistance programs, tuition assistance and on-site services, such as health centers and fitness centers, among many others. In addition to our broad-based equity award programs, we have used targeted equity-based grants with vesting conditions to facilitate retention of personnel, particularly those with critical engineering skills and experience.

Talent Development. We invest significant resources to develop the talent needed to remain a world-leading wireless innovator. We deliver numerous training opportunities, provide rotational assignment opportunities, have expanded our focus on continuous learning and development, and implemented "industry-leading" methodologies to manage performance, provide feedback and develop talent.

Our talent development programs provide employees with the resources they need to help achieve their career goals, build management skills and lead their organizations. We provide a series of employee workshops around the globe that support professional growth and development. Additionally, our manager and employee forum programs provide an ongoing opportunity for employees to practice and apply learning around conversations aligned with our annual review process. We also have an employee development website that provides quick access to learning resources that are personalized to the individual's development needs.

Building Connections - With Each Other and our Communities. We believe that building connections between our employees, their families and our communities creates a more meaningful, fulfilling and enjoyable workplace. Through our engagement programs, our employees can pursue their interests and hobbies, connect to volunteering and giving opportunities and enjoy unique recreational experiences with family members. Leveraging our partnerships with various local arts and culture organizations, we have created numerous unique experiences for employees and their families around the world.

Since our employees are passionate about many causes, our corporate giving and volunteering programs support and encourage employees by engaging with those causes. In our offices around the world, our employee-led Giving Committees select local organizations to support, often in the form of grants that are primarily funded by the Qualcomm Foundation (which was established in 2011 to support charitable giving and volunteerism). We also frequently collaborate with these organizations on volunteer activities for our employees. Additionally, during fiscal 2021, thousands of our employees around the world utilized our charitable match program, benefiting more than 1,600 charitable organizations.

2025 Goals. We set the following *2025 Goals* related to human capital, with a focus on diversity and inclusion:

- Increase women in leadership by 15% (defined as individuals at the principal and above level in technical roles, and director and above in non-technical roles).
- Increase underrepresented minorities (URM) in leadership by 15% (for technical positions, "URM" includes Black, Latinx, Native Hawaiian or other Pacific Islander, and American Indian or Native American; for non-technical positions, URM also includes Asian).
- Increase overall URM representation by 20%.

Human Capital Advancements Added to our Executive Compensation. As previously disclosed in our 2021 Proxy Statement, and in response to stockholder feedback, our HR and Compensation Committee allocated 10% of our executives' fiscal 2021 bonus to be based upon human capital advancements. The HR and Compensation Committee then adopted a framework for human capital advancements to include advancement of our 2025 diversity and inclusion goals, workforce stability and responsiveness to COVID-19.

The foregoing discussion includes information regarding Human Capital matters that we believe may be of interest to stockholders generally. We recognize that certain other stakeholders (such as customers, employees and non-governmental organizations), as well as certain of our stockholders, may be interested in more detailed information on these topics. We encourage you to review the "Our People" section of our most recent *Qualcomm Corporate Responsibility Report* (located on our website) for more detailed information regarding our Human Capital goals, programs and initiatives. Nothing on our website, including our Consolidated EEO-1 reports, our

Qualcomm Corporate Responsibility Report or sections thereof, shall be deemed incorporated by reference into this Annual Report.

Available Information

Our Internet address is www.qualcomm.com. There we make available, free of charge, our Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and any amendments to those reports (among others), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). We also make available on our website public financial information for which a report is not required to be filed with or furnished to the SEC. Our SEC reports and such other information can be accessed through the investor relations section of our website (https://investor.qualcomm.com/). The information found on our website is not part of this or any other report we file with or furnish to the SEC.

Information about our Executive Officers

Our executive officers (and their ages as of November 1, 2021) are as follows:

Cristiano R. Amon, age 51, has served as President and Chief Executive Officer and as a director since June 2021. He served as President and Chief Executive Officer-elect from January 2021 to June 2021 and as President from January 2018 to January 2021. He served as Executive Vice President, Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated (QTI), and President, QCT, from November 2015 to January 2018. He served as Executive Vice President, QTI and Co-President, QCT from October 2012 to November 2015, Senior Vice President and Co-President, QCT from June 2012 to October 2012 and as Senior Vice President, QCT Product Management from October 2007 to June 2012, with responsibility for our product roadmap, including the Qualcomm Snapdragon platforms. Mr. Amon joined Qualcomm in 1995 as an engineer and throughout his tenure at Qualcomm has held several other technical and leadership positions. Mr. Amon holds a B.S. in Electrical Engineering and an honorary doctorate from UNICAMP, the State University of Campinas, Brazil.

Heather Ace, age 51, has served as Chief Human Resources Officer since March 2020. Prior to joining Qualcomm, Ms. Ace was Senior Vice President, Human Resources at DexCom, Inc., a provider of continuous glucose monitoring, from July 2016 to March 2020. Prior to DexCom, she was Executive Vice President, Human Resources at Orexigen Therapeutics, Inc., a developer of treatments for obesity, from January 2016 to July 2016. Ms. Ace was Integration Leader for Royal Philips, leading the cross-functional integration of Philips Healthcare's acquisition of Volcano Corporation, from January 2015 to January 2016. She was Executive Vice President, Human Resources at Volcano Corporation from May 2012 to January 2015. Prior to May 2012, Ms. Ace served in various senior executive roles in human resources, post-acquisition/merger integration and employment law at Life Technologies Corporation. She began her career at Gray Cary Ware & Freidenrich (now DLA Piper) as a litigation and transactional employment attorney, specializing in mergers and acquisitions. Ms. Ace holds a B.A. in Law & Society from the University of California, Santa Barbara and a J.D. from Santa Clara School of Law.

Ann Cathcart Chaplin, age 48, has served as General Counsel and Corporate Secretary since November 2021. Prior to joining Qualcomm, Ms. Chaplin served at General Motors Company as Corporate Secretary and Deputy General Counsel, U.S., Transformation Initiatives and Corporate Securities from February 2021 to November 2021, Deputy General Counsel and Chief Compliance Officer, North America, Transformation Projects and Compliance from April 2019 to February 2021, Deputy General Counsel, Commercial, Transportation as a Service, Litigation and Regulation from January 2018 to April 2019, Deputy General Counsel, Intellectual Property, Regulation and Litigation from June 2017 to January 2018 and Deputy General Counsel, Litigation from December 2015 to June 2017. Prior to General Motors, Ms. Chaplin was Litigation Practice Group Leader/Litigation Equity Principal at the law firm of Fish & Richardson P.C. from February 2001 to December 2015. She began her career as an intellectual property litigation associate at the law firm of Robins, Kaplan, Miller & Ciresi LLP. Ms. Chaplin holds a B.A in Sociology of Law from the University of Minnesota and a J.D. from Harvard Law School.

Akash Palkhiwala, age 46, has served as Chief Financial Officer since November 2019. He served as Senior Vice President and Interim Chief Financial Officer from August 2019 to November 2019. He served as Senior Vice President, QCT Finance, QTI from December 2015 to August 2019 and Senior Vice President and Treasurer from October 2014 to December 2015. Mr. Palkhiwala served as Vice President, QCT Finance from October 2012 to October 2014 and Vice President, QCT Finance, QTI from October 2009 to October 2012. He served in various other finance roles since joining Qualcomm in March 2001. Prior to joining Qualcomm, Mr. Palkhiwala was an Analyst at KeyBank. Mr. Palkhiwala has an undergraduate degree in Mechanical Engineering from L.D. College of Engineering in India and an M.B.A from the University of Maryland.

Alexander H. Rogers, age 64, has served as President, QTL and Global Affairs since June 2021. He served as President, QTL from October 2016 to June 2021. He served as Senior Vice President and President, QTL from September 2016 to October 2016, Senior Vice President, Deputy General Counsel and General Manager, QTL from March 2016 to September 2016, Senior Vice President and Deputy General Counsel from October 2015 to March

2016 and Senior Vice President and Legal Counsel from April 2007 to October 2015. Prior to transitioning to QTL, Mr. Rogers led Qualcomm's litigation group. Mr. Rogers joined Qualcomm in January 2001 as an attorney. Prior to joining Qualcomm, he was a partner at the law firm of Gray, Cary, Ware & Freidenrich (now DLA Piper), specializing in intellectual property and commercial litigation. Mr. Rogers holds a B.A. and an M.A. in English Literature from Georgetown University and a J.D. from Georgetown University Law Center.

James H. Thompson, age 57, has served as Chief Technology Officer, QTI since March 2017. He served as Executive Vice President, Engineering, QTI from October 2012 to March 2017 and as Senior Vice President, Engineering from July 1998 to October 2012. Dr. Thompson joined Qualcomm in 1992 as a senior engineer and throughout his tenure at Qualcomm has held several other technical and leadership positions. Dr. Thompson holds a B.S., an M.S. and a Ph.D. in Electrical Engineering from the University of Wisconsin.

Item 1A. Risk Factors

You should consider each of the following factors in evaluating our business and our prospects. However, the risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also negatively impact our business, results of operations, cash flows and financial condition, and require significant management time and attention. In that case, the trading price of our common stock could decline. You should also consider the other information set forth in this Annual Report in evaluating our business and our prospects, including but not limited to our financial statements and the related notes, and "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations." References to "and," "or" and "and/or" should be read to include the others, as appropriate.

RISKS RELATED TO THE CORONAVIRUS (COVID-19) PANDEMIC

The coronavirus (COVID-19) pandemic had an adverse effect on our business and results of operations, and may continue to impact us in the future.

The rapid, global spread of COVID-19 and the fear it created resulted in significant economic uncertainty, significant declines in business and consumer confidence and global demand in the wireless industry (among others) and a global economic slowdown, which resulted in a global recession. Specifically, throughout most of calendar 2020 and into early calendar 2021, the decline in demand for smartphones and other consumer devices sold by our customers or licensees resulted in decreased demand for our integrated circuit products (which are incorporated into such devices) and a decrease in the royalties we earned on the licensing of our intellectual property (which is dependent upon the number of such devices sold that utilize our intellectual property). The COVID-19 pandemic could impact our business, results of operations and financial condition in the future through delayed, reduced or cancelled customer orders; disruptions or delays in our supply chain; the inability of our customers or licensees to purchase or pay for our products or technologies; the insolvency of key suppliers, customers or licensees; delays in reporting or payments from our customers or licensees; or failures by other counterparties. Additionally, federal, state or foreign governments may in the future increase corporate tax rates, increase employer payroll tax obligations and/or otherwise change tax laws to pay for stimulus and other actions that have been and may in the future be taken as a result of the COVID-19 pandemic.

The COVID-19 pandemic also caused us to modify our workforce practices, such as having the vast majority of our employees working from home. We could be negatively affected in the future if, among others, a significant number of our employees, or employees who perform critical functions, become ill and/or are quarantined as the result of exposure to COVID-19, or if government policies restrict the ability of those employees to perform their critical functions. Further, our efforts to reopen our offices safely may not be successful, could expose our employees, customers, licensees and partners to health risks and us to associated liability, and could result in disruptions among our employees. See also the Risk Factor titled "*We may not be able to attract and retain qualified employees, and our attempts to fully reopen our offices and operate under a hybrid working environment may not be successful.*"

The degree to which the COVID-19 pandemic impacts our future business, results of operations and financial condition will depend on future developments, which are uncertain, including but not limited to the duration, spread and severity of the pandemic; the availability, adoption and efficacy of vaccines; the emergence, spread and severity of new variants of COVID-19, and the protection afforded by vaccines against such variants; government responses and other actions to mitigate the spread of and to treat COVID-19; and when and to what extent normal business, economic and social activity and conditions resume. We are similarly unable to predict the extent to which the pandemic impacts our customers, licensees, suppliers and other partners and their financial conditions, but adverse effects on these parties could also adversely affect us. Finally, the COVID-19 pandemic may make it harder for management to estimate the future performance of our business. To the extent the COVID-19 pandemic adversely affects our business, results of operations and financial condition, it may also have the effect of exacerbating the other risks discussed in this "Risk Factors" section.

RISKS RELATED TO OUR OPERATING BUSINESSES

We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected.

We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices, and we expect this trend to continue in the foreseeable future. Our industry is experiencing and may continue to experience concentration of device share among a few companies, particularly at the premium tier, contributing to this trend. Certain Chinese OEMs continue to grow their device share in China and are increasing their device share in regions outside of China, and we derive a significant portion of our revenues from a small number of these OEMs as well. See also “Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies - Concentrations.”

In addition, a number of our largest integrated circuit customers have developed, are developing or may develop their own integrated circuit products, or may choose our competitors’ integrated circuit products, which they have in the past utilized, currently utilize and may in the future utilize in some (or all) of their devices, rather than our products, which could significantly reduce the revenues we derive from these customers. See also the Risk Factor titled "*Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products)*."

Further, political actions, including trade and/or national security protection policies, or other actions by governments, particularly the U.S. and Chinese governments, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our customers, limit, prevent or discourage those customers from transacting business with us, or make it more expensive to do so, any of which could also significantly reduce the revenues we derive from these customers. See also the Risk Factor titled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions*."

In addition, we spend a significant amount of engineering and development time, funds and resources in understanding our key customers' feedback and/or specifications and attempt to incorporate such input into our product launches and technologies. These efforts may not require or result in purchase commitments from such customers or we may have lower purchases from such customers than expected, and consequently, we may not achieve the anticipated revenues from these efforts, or these efforts may result in non-recoverable costs.

The loss of any one of our significant customers, a reduction in the purchases of our products by such customers or the cancellation of significant purchases by any of these customers, whether due to the use of their own integrated circuit products or our competitors' integrated circuit products, government restrictions, the COVID-19 pandemic or otherwise, would reduce our revenues and could harm our ability to achieve or sustain expected results of operations, and a delay of significant purchases, even if only temporary, would reduce our revenues in the period of the delay. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development.

Further, the concentration of device share among a few companies, and the corresponding purchasing power of these companies, may result in lower prices for our products which, if not accompanied by a sufficient increase in the volume of purchases of our products, could have an adverse effect on our revenues and margins. In addition, the timing and size of purchases by our significant customers may be impacted by the timing of such customers' new or next generation product introductions, over which we have no control, and the timing and success of such introductions may cause our revenues and results of operations to fluctuate.

Apple purchases our MDM (or thin modem) products, which do not include our integrated application processor technology, and which have lower revenue and margin contributions than our combined modem and application processor products. Consequently, to the extent Apple takes device share from our customers who purchase our integrated modem and application processor products, our revenues and margins may be negatively impacted.

Our industry has also experienced slowing growth in the premium-tier device segment due to, among other factors, a maturing premium-tier smartphone industry in which demand is increasingly driven by new product launches and innovation cycles.

A reduction in sales of premium-tier devices, a reduction in sales of our premium-tier integrated circuit products (which have a higher revenue and margin contribution than our lower-tier integrated circuit products), or a shift in share away from OEMs that utilize our premium-tier products, would reduce our revenues and margins and may harm our ability to achieve or sustain expected financial results. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development.

Further, while our product and revenue diversification strategies have resulted in an increasing portion of our revenues coming from outside of mobile handsets, e.g., from industries such as automotive and IoT, certain product categories within those industries may in themselves be subject to high levels of customer concentration.

Although we have more than 300 licensees, we derive a significant portion of our licensing revenues from a limited number of licensees, which includes a number of Chinese OEMs. In the event that one or more of our significant licensees fail to meet their reporting and payment obligations, or we are unable to renew or modify one or more of their license agreements under similar terms as their existing agreements, our revenues, results of operations and cash flows would be adversely impacted. Moreover, the future growth and success of our core licensing business will depend in part on the ability of our licensees to develop, introduce and deliver high-volume products that achieve and sustain customer acceptance. We do not have control over the product development, sales efforts or pricing of products by our licensees, and our licensees might not be successful. Reductions in sales of our licensees' products, or reductions in the average selling prices of wireless devices sold by our licensees without a sufficient increase in the volumes of such devices sold, would generally have an adverse effect on our licensing revenues.

Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products).

Certain of our largest integrated circuit customers (for example, Samsung) develop their own integrated circuit products, which they have in the past utilized, and currently utilize, in certain of their devices and may in the future utilize in some (or all) of their devices, rather than our products (and they have and may continue to sell their integrated circuit products to third parties, discretely or together with certain of their other products, in competition with us).

Apple has utilized modem products of one of our competitors in some of its devices rather than our products, and solely utilized one of our competitors' products in several of its prior device launches. In April 2019, we entered into a multi-year chipset supply agreement with Apple and began shipping modems under this agreement in the third quarter of fiscal 2020. In December 2019, Apple acquired Intel's modem assets and is developing its own modem products using these assets. Accordingly, Apple is expected to use its own modem products, rather than our products, in some (or all) of its future devices.

Similarly, we derive a significant portion of our revenues from Chinese OEMs. Certain of our customers in China have developed, and others may in the future develop, their own integrated circuit products and use such integrated circuit products in their devices rather than our integrated circuit products, including due to pressure from or policies of the Chinese government (whose *Made in China 2025* campaign targets 70% semiconductor self-sufficiency by 2025), concerns over losing access to our integrated circuit products as a result of actual, threatened or potential U.S. or Chinese government actions or policies, including trade protection or national security policies, or other reasons.

In addition, supply/capacity constraints within the semiconductor industry may further incentivize our integrated circuit customers to vertically integrate in an effort to secure additional control over their supply chains.

If some or all of our largest customers and/or the largest smartphone OEMs utilize their own integrated circuit/modem products in some (or all) of their devices rather than our products, our business, revenues, results of operations, cash flows and financial position could be materially adversely impacted. See also the Risk Factor titled "*We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected*."

A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.

We derive a significant portion of our revenues from Chinese OEMs, and from non-Chinese OEMs that utilize our integrated circuit products in their devices and sell those devices into China, which has the largest number of smartphone users in the world. We also source certain critical integrated circuit products from suppliers in China.

Due to various factors, including pressure, encouragement or incentives from, or policies of, the Chinese government (including its *Made in China 2025* campaign), concerns over losing access to our integrated circuit products as a result of actual, threatened or potential U.S. or Chinese government actions or policies, including trade protection or national security policies, or other reasons, some of our Chinese integrated circuit customers have developed, and others may in the future develop, their own integrated circuit products and use such integrated circuit products in their devices, or use our competitors' integrated circuit products in their devices, rather than our products.

Political actions, including trade protection and national security policies of the U.S. and Chinese governments, such as tariffs, bans or placing companies on restricted entity lists, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our Chinese customers or suppliers, limit, prevent or discourage certain of our Chinese customers or suppliers from transacting business with us, or make it more expensive to do so. Given our revenue concentration in China, if, due to actual, threatened or potential U.S. or Chinese government actions or policies: we were further limited in, or prohibited from, selling our integrated circuit products to Chinese OEMs; if our non-Chinese OEM customers were limited in, or prohibited from, selling devices into China that incorporate our integrated circuit products; if Chinese OEMs develop and use their own integrated circuit products or use our competitors' integrated circuit products in some (or all) of their devices rather than our integrated circuit products; if Chinese tariffs on our integrated circuit products or on devices which incorporate our integrated circuit products made purchasing such products or devices more expensive to Chinese OEMs or Chinese consumers; or if our Chinese licensees delay or cease making payments of license fees they owe us, our business, revenues, results of operations, cash flows and financial position could be materially harmed. Similarly, if, due to U.S. or Chinese government actions or policies, we were limited in or prohibited from obtaining critical integrated circuit products from our suppliers in China, our business, revenues, results of operations, cash flows and financial position could be materially harmed.

Finally, government policies in China that regulate the amount and timing of funds that may flow out of the country have impacted and may continue to impact the timing of our receipt of, and/or ability to receive, payments from our customers and licensees in China, which may negatively impact our cash flows.

RISKS RELATED TO NEW INITIATIVES

Our growth depends in part on our ability to extend our technologies and products into new and expanded product areas, and industries and applications beyond mobile handsets. Our research, development and other investments in these new and expanded product areas, industries and applications, and related technologies and

products, as well as in our existing technologies and products, and new technologies, may not generate operating income or contribute to future results of operations that meet our expectations.

While we continue to invest significant resources toward advancements primarily in support of 4G- and 5G-based technologies, we also invest in new and expanded product areas, and industries and applications beyond mobile handsets, by utilizing our existing technical and business expertise and through acquisitions or other strategic transactions.

In particular, our future growth depends in part on new and expanded product areas, such as RFFE, and industries and applications beyond mobile handsets, such as automotive and IoT; our ability to develop leading and cost-effective technologies and products for these new and expanded product areas, industries and applications; and third parties incorporating our technologies and products into devices used in these product areas, industries and applications. Accordingly, we intend to continue to make substantial investments in these new and expanded product areas, industries and applications, and in developing new products and technologies for these product areas, industries and applications. Our growth also depends significantly on our ability to develop and patent 5G technologies, and to develop and commercialize products using 5G technologies.

However, our research, development and other investments in these new and expanded product areas, industries and applications, and corresponding technologies and products, as well as in our existing, technologies and products and new technologies, such as 5G, use of licensed, shared and unlicensed spectrum and convergence of cellular and Wi-Fi, may not succeed because, among other reasons: we may not be issued patents on the technologies we develop; the technologies we develop may not be incorporated into relevant standards; new and expanded product areas, industries and applications beyond mobile handsets, and consumer demand therein, may not develop or grow as anticipated; we may be unable to attract or retain employees with the necessary skills in such new and expanded product areas, industries and applications; our strategies or the strategies of our customers, licensees or partners may not be successful; alternate technologies may be better or may reduce the advantages we anticipate from our investments; competitors' technologies or products may be more cost effective, have more capabilities or fewer limitations or be brought to market faster than our new technologies or products; we may not be able to develop, or our competitors may have more established and/or stronger, customer, vendor, distributor or other channel relationships; and competitors may have longer operating histories in industries and applications that are new to us. We may also underestimate the costs of or overestimate the future revenues or margins that could result from these investments, and these investments may not, or may take many years to, generate material returns.

Further, the automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in significant barriers to entry and increased costs.

In addition, in order to successfully extend our technologies and products into new and expanded product areas, and industries and applications beyond mobile handsets, we may need to transition to new business models and transform aspects of our organization, and we may not be successful in doing so.

If our new technologies and products are not successful, or are not successful in the time frames we anticipate, we may incur significant costs and asset impairments, our business and revenues may not grow or grow as anticipated, our revenues and margins may be negatively impacted, our stock price may decline and our reputation may be harmed.

We may engage in acquisitions and other strategic transactions or make investments, or be unable to consummate planned strategic acquisitions, which could adversely affect our results of operations or fail to enhance stockholder value.

We engage in acquisitions and other strategic transactions, including joint ventures, and make investments, which we believe are important to the future of our business, with the goal of maximizing stockholder value. From time to time, we acquire businesses and other assets, including patents, technology and other intangible assets, enter into joint ventures or other strategic transactions and purchase minority equity interests in or make loans to companies, including those that may be private and early-stage. Our strategic activities are generally focused on opening or expanding opportunities for our products and technologies and supporting the design and introduction of new products (or enhancing existing products) for mobile handsets, and for new industries and applications beyond mobile handsets. Many of our strategic activities entail a high degree of risk and require the use of significant amounts of capital, and investments may not become liquid for several years after the date of the investment, if at all. Our strategic activities may not generate financial returns or result in increased adoption or continued use of our technologies or products. We may underestimate the costs or overestimate the benefits, including product, revenue, cost and other synergies and growth opportunities that we expect to realize, and we may not achieve those benefits. In some cases, we may be required to consolidate or record our share of the earnings or losses of companies in which we have acquired ownership interests. In addition, we have in the past recorded, and may in the future record, impairment or other charges related to our strategic activities. Any losses or impairment charges that we incur related to strategic activities will have a negative impact on our results of operations and financial condition, and we may continue to incur new or additional losses related to strategic assets or investments that we have not fully impaired or exited.

Achieving the anticipated benefits of business acquisitions depends in part upon our ability to integrate the businesses in an efficient and effective manner and achieve anticipated synergies, and we may not be successful in these efforts. Such integration is complex and time consuming and involves significant challenges, including, among others: retaining key employees; successfully integrating new employees, facilities, technology, products, processes, operations (including supply and manufacturing operations), sales and distribution channels, business models and business systems; retaining customers and suppliers of the businesses; consolidating research and development operations; minimizing the diversion of management's attention from ongoing business matters; consolidating corporate and administrative infrastructures; and managing the increased scale, complexity and globalization of our business, operations and employee base. We may not derive any commercial value from associated technologies or products or from future technologies or products based on these technologies, and we may be subject to liabilities that are not covered by indemnification protection that we may obtain, and we may become subject to litigation. Additionally, we may not be successful in entering or expanding into new sales or distribution channels, business or operational models, geographic regions, industries and applications served by or adjacent to the associated businesses or in addressing potential new opportunities that may arise out of our strategic acquisitions.

If we do not achieve the anticipated benefits of business acquisitions or other strategic activities, our business and results of operations may be adversely affected, and we may not enhance stockholder value by engaging in these transactions.

Many of our acquisitions and other strategic investments require approval by the United States and/or foreign government agencies. Certain agencies in the past have, and may in the future, deny the transaction or fail to approve in a timely manner, resulting in us not realizing the anticipated benefits of the proposed transaction. Future acquisitions or other strategic investments may be more difficult, complex or expensive to the extent that our reputation for our ability to consummate acquisitions has been harmed. Further, if U.S./China relations remain strained, our ability to consummate any transaction that would require approval from the relevant regulatory agency(ies) in China may be severely impacted.

RISKS RELATED TO SUPPLY AND MANUFACTURING

We depend on a limited number of third-party suppliers for the procurement, manufacture, assembly and testing of our products manufactured in a fabless production model. If we fail to execute supply strategies that provide supply assurance, technology leadership and reasonable margins, our business and results of operations may be harmed. We are also subject to order and shipment uncertainties that could negatively impact our results of operations.

We primarily utilize a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Other than the facilities we own that manufacture certain of our RFFE modules and RF (radio frequency) filter products, we rely on third-party suppliers to perform the manufacturing and assembly, and most of the testing, of our integrated circuits. Our suppliers are also responsible for the procurement of most of the raw materials used in the production of our integrated circuits. There are a limited number of such third-party suppliers, and even fewer who are capable of manufacturing at the leading process technology nodes or who are willing to operate at older process technology nodes. The semiconductor manufacturing foundries that supply our products are primarily located in Asia, as are our primary warehouses where we store finished goods for fulfillment of customer orders.

The following issues related to our third-party suppliers could have an adverse effect on our ability to meet customer demand and negatively impact our revenues, business operations, profitability and cash flows:

- a reduction, interruption, delay or limitation in our product supply sources;
- a failure by our suppliers to procure raw materials or allocate adequate raw materials for our products;
- an inability to procure or utilize raw materials, components or products from our suppliers due to government prohibitions or restrictions on transactions with certain countries and/or companies, and alternative suppliers, raw material sources or raw materials are not available or not available in acceptable time frames or upon acceptable terms;
- a failure by our suppliers to allocate adequate manufacturing, assembly or test capacity for our products;
- our suppliers' inability to react to shifts in product demand or an increase in raw material or component prices;
- our suppliers' inability to develop or maintain, or a delay in developing or building out, manufacturing capacity for leading process technologies, including transitions to smaller geometry process technologies;
- the loss of a supplier or the inability of a supplier to meet performance, quality or yield specifications or delivery schedules;
- additional expense or production delays as a result of qualifying a new supplier and commencing volume production or testing in the event of a loss of, or a decision to add or change, a supplier;
- natural disasters, the effects of climate change or geopolitical conflicts impacting our suppliers;
- health crises, including epidemics or pandemics, such as the COVID-19 pandemic, and government and business responses thereto, which impact our suppliers, including as a result of quarantines or closures;
- cyber-attacks on our suppliers' information technology (IT) systems, including those related to their manufacturing foundries or assembly, test or other facilities; and

- trade or national security protection policies, particularly U.S. or Chinese government policies, that limit or prevent us from transacting business with suppliers of critical integrated circuit products, or that limit or prevent such suppliers from transacting business with us or from procuring materials, machinery or technology necessary to manufacture goods for us.

While we have established alternate suppliers for certain technologies, there are a limited number of such suppliers, and even fewer who are capable of operating at the leading process technology nodes or who are willing to operate at older process technology nodes. We rely on sole- or limited-source suppliers for certain products, which may exacerbate the risks identified above, and subject us to other significant risks, including poor product performance and reduced control over delivery schedules, manufacturing capability and yields, quality assurance, quantity and costs. To the extent we have established or in the future establish alternate suppliers, these suppliers may require significant amounts of time and levels of support to bring such technologies to production, both of which may increase for complex or leading process technologies. As a result, we may invest a significant amount of effort and resources and incur higher costs to support and maintain such alternate suppliers. Further, the elimination or limitation of a foundry supplier's ability to manufacture components or products for us due to trade or national security protection policies could increase our vulnerability to sole- or limited-source arrangements and limit or prevent us from procuring critical components or products from those suppliers. Future consolidation of foundry suppliers could also increase our vulnerability to sole- or limited-source arrangements and reduce our suppliers' willingness to negotiate pricing, which could negatively impact our ability to achieve cost reductions, increase our manufacturing costs and limit the amount of capacity available to us. Our arrangements with our suppliers may obligate us to incur costs to manufacture, assemble and test our products that do not decrease at the same rate as decreases in pricing to our customers. Our ability, and that of our suppliers, to develop or maintain leading process technologies, including transitions to smaller geometry process technologies (which adds risk to manufacturing yields and reliability), and to effectively compete with the manufacturing processes and performance of our competitors, could impact our ability to introduce new products and meet customer demand, could increase our costs (possibly decreasing our margins) and could subject us to the risk of excess inventories. Any of the above could negatively impact our business, results of operations and cash flows.

Although we have long-term contracts with our suppliers, some of these contracts do not provide for long-term capacity commitments. To the extent we do not have firm commitments from our suppliers over a specific time period or for any specific quantity, our suppliers may allocate, and in the past have allocated, capacity to the manufacture, assembly and testing of products for their other customers (including our competitors) while reducing or limiting capacity to manufacture, assemble or test our products, and such capacity may be limited based on our suppliers' ability and willingness to invest in the capital required to manufacture in the leading process technologies. Our suppliers or potential alternate suppliers may also manufacture their own integrated circuits that compete with our products. Such suppliers have in the past and could again elect to allocate raw materials and manufacturing capacity to their own products and reduce or limit the production of our products. Accordingly, capacity for our products may not be available when we need it. To the extent we do obtain long-term capacity commitments, we may incur additional costs related to those commitments or make non-refundable payments for capacity commitments that are not used. In addition, we may not receive reasonable pricing, manufacturing or delivery terms from our suppliers, and our ability to obtain favorable terms may be diminished during times of high demand and/or limited manufacturing capacity for integrated circuit products.

We cannot guarantee that the actions of our suppliers will not cause disruptions in our operations that could harm our ability to meet our delivery obligations to our customers or increase our cost of sales. To the extent we are unable to obtain adequate supply to meet our delivery obligations, we may be obligated to make payments to our customers for such shortfalls. Currently, the global semiconductor industry is experiencing demand for integrated circuits that exceeds the industry's capacity to meet that demand. Our ability to meet increased demand for our products has been and may continue to be limited due to the inability to obtain the additional manufacturing, assembly and test capacity necessary to fully meet such demand. If we are unable to fully meet customer demand, this could result in lost sales opportunities, reduced revenue growth and harm to our customer relationships. These issues may be exacerbated if customers overstate their expected demand requirements in order to procure additional supply, which could negatively impact our ability to forecast and to allocate supply appropriately among our customers. These issues may also be exacerbated with respect to our platform solutions, which already entail a great deal of complexity due to differing lead-times, technologies and suppliers for each integrated circuit product included in such solutions.

Additionally, we place orders with our suppliers using our and our customers' forecasts of demand for our products, which are based on a number of assumptions and estimates. As we move to smaller geometry process technologies, the manufacturing lead-time increases. As a result, the orders we place with our suppliers are generally only partially covered by commitments from our customers. If we, or our customers, overestimate demand, or if demand is impacted by factors outside of our or our customers' control, and such demand is not covered by a binding commitment from our customers, we may experience increased excess or obsolete inventory, which would negatively impact our results of operations.

See also the Risk Factor below titled *"There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model; environmental compliance and liability; impacts related to climate change; exposure to natural disasters, health crises and cyber-attacks; timely supply of equipment and materials; and various manufacturing issues"* as similar risks, as well as additional risks, may be applicable to our third-party suppliers' manufacturing facilities, which could result in disruptions to our business or additional costs to us, and negatively impact our results of operations.

There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model; environmental compliance and liability; impacts related

to climate change; exposure to natural disasters, health crises and cyber-attacks; timely supply of equipment and materials; and various manufacturing issues.

We own and operate various facilities that manufacture certain of our RFFE modules and RF filter products. Manufacturing facilities are characterized by a higher portion of fixed costs relative to a fabless model. We may be faced with a decline in the utilization rates of our manufacturing facilities due to decreases in demand for our products, including in less favorable industry environments, or due to our failure to win and/or retain designs with OEMs. During such periods, our manufacturing facilities could operate at lower capacity levels, while the fixed costs associated with such facilities would continue to be incurred, resulting in lower gross profit.

We are subject to many complex environmental, health and safety laws, regulations and rules in each jurisdiction in which we operate our R&D and manufacturing facilities. The regulatory landscape in these areas continues to evolve, and we anticipate additional laws, regulations and rules in the future. In particular, new, or changes in, environmental and climate change laws, regulations or rules, including relating to GHG emissions, could lead to new or additional investments in production processes and could increase environmental compliance expenditures. In addition, certain environmental laws impose strict, and in certain circumstances joint and several, liability on current or previous owners or operators of real property, or parties who arranged for hazardous substances to be sent to disposal or treatment facilities, for the cost of investigation, removal or remediation of hazardous substances. As a result, we may incur clean-up costs in connection with any such removal or remediation efforts, as well as other third-party claims in connection with contaminated sites. In addition, we could be held liable for consequences arising out of human exposure to hazardous substances or other environmental damage. If we, or companies or facilities we acquire or have acquired, in the past failed or in the future fail to comply with any such laws and regulations, then we could incur regulatory penalties, fines, and legal liabilities; suspension of production; significant compliance requirements; alteration of our manufacturing, assembly or test processes; restriction on our ability to modify or expand our facilities; damage to our reputation; and restrictions on our operations or sales. We are also required to obtain and maintain environmental permits from governmental authorities for certain of our operations. We cannot make assurances that we will at all times be in compliance with such laws, regulations, rules and permits. See also the risk factor titled *"Our business may suffer due to the impact of, or our failure to comply with, the various existing, new or amended laws, regulations, policies or standards to which we are subject."*

Climate change concerns and the potential resulting environmental impact may result in new environmental, health and safety laws and regulations that may affect us, our suppliers and our customers. Such laws or regulations could cause us to incur additional direct costs for compliance, including costs associated with changes to manufacturing processes or the procurement of raw materials used in manufacturing processes, as well as increased indirect costs resulting from our customers, suppliers or both incurring additional compliance costs that are passed on to us. These costs may adversely impact our results of operations and financial condition. In addition, climate change could cause certain natural disasters, such as drought, wildfires, storms, flooding or rising sea levels, to occur more frequently or with greater intensity, which could pose physical risks to our manufacturing facilities or our suppliers' facilities, could disrupt the availability of water necessary for the operation of our manufacturing facilities or our suppliers' facilities, and could increase or decrease temperatures resulting in increased operating costs and/or business disruption.

We have manufacturing facilities in Asia and Europe. If tsunamis, flooding, earthquakes, volcanic eruptions, drought or other natural disasters, effects of climate change or geopolitical conflicts, were to damage, destroy or disrupt our manufacturing facilities, it could disrupt our operations, delay production and shipments of inventory and result in costly repairs, replacements or other costs. In addition, natural disasters, effects of climate change or geopolitical conflicts may result in disruptions in transportation, distribution channels and supply chains, and significant increases in the prices of raw materials. Further, health crises, including epidemics or pandemics, such as the COVID-19 pandemic, and government and business responses thereto, could affect our manufacturing facilities, including by resulting in quarantines and/or closures, which would result in disruptions to and potential closures of our manufacturing operations. Our manufacturing operations could also be disrupted by cyber-attacks on our IT systems, as described in the Risk Factor below titled *"Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information."*

Our manufacturing operations depend on securing raw materials and other supplies in adequate quality and quantity in a timely manner from multiple suppliers, and in some cases, we rely on a limited number of suppliers, including in some cases sole suppliers, particularly in Asia. There may be cases where supplies of raw materials and other products are interrupted by disaster, accident or some other event at a supplier; supply is suspended due to quality or other issues; there is a shortage of supply due to a rapid increase in demand; and/or we or our suppliers are prohibited from utilizing certain raw materials, or products or components that incorporate such raw materials, due to government restrictions related to the countries from which such raw materials originate, and acceptable alternative suppliers, raw materials or raw materials sources are not available or not available in acceptable time frames or upon acceptable terms, among others, which could impact production and prevent us from supplying our products to our customers. If the supply-demand balance is disrupted, it may considerably increase costs of manufacturing due to increased prices we pay for raw materials. From time to time, suppliers may extend lead times, limit amounts supplied to us or increase prices due to capacity constraints or other factors. Additionally, supply and costs of raw materials may be negatively impacted by trade and/or national security protection policies, such as tariffs, or actions by governments that limit or prevent us from transacting business with certain countries or companies or that limit or prevent certain companies from transacting business with us, or trade tensions, particularly with countries in Asia. Further, it may be difficult or impossible to substitute one piece of equipment for another or replace one type of material with another. A failure by our suppliers to deliver our requirements could result in disruptions to our manufacturing operations.

Our manufacturing processes are highly complex, require advanced and costly equipment and must be continuously modified to improve yields and performance. Difficulties in the production process can reduce yields or interrupt production, and as a result, we may not be able to deliver our products or do so in a timely, cost-effective or competitive manner. Further, to remain competitive and meet customer demand, we may be required to improve our facilities and process technologies and carry out extensive research and development, each of which may require investment of significant amounts of capital and may have a material adverse effect on our results of operations, cash flows and financial condition.

Finally, we typically begin manufacturing our products using our or our customers' forecasts of demand for our products, which are based on a number of assumptions and estimates and may not be covered by long-term purchase commitments. As a result, we incur inventory and manufacturing costs in advance of anticipated sales, which sales ultimately may not materialize or may be lower than expected. If we or our customers overestimate demand, or if demand is impacted by factors outside of our or our customers' control such as the COVID-19 pandemic or trade or national security protection policies, that is not under a binding commitment from our customers, we may experience higher inventory carrying and operating costs and/or increased excess or obsolete inventory, which would negatively impact our results of operations

RISKS RELATED TO CYBERSECURITY OR MISAPPROPRIATION OF OUR CRITICAL INFORMATION

Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information.

Third parties regularly attempt to gain unauthorized access to our IT systems, and many such attacks are increasingly more sophisticated. The perception that the COVID-19 pandemic has made companies' IT systems more vulnerable has increased the already significant volume of such attacks. These attacks, which might be related to industrial, corporate or other espionage, criminal hackers or state-sponsored intrusions, include trying to covertly introduce malware to our computers and networks, including those in our manufacturing operations, and impersonating authorized users, among others. We may also be subject to ransom-style cyber-attacks, which could impact our IT systems and cause widespread disruption to our business, including our manufacturing operations, and expose our confidential or propriety information. Third parties that store and/or process our confidential information, or that provide products, software or services used in our IT infrastructure (including applications), may be subject to similar attacks, which could also result in malware being introduced into our IT infrastructure, e.g., through the third parties' software updates. Such attacks could result in the misappropriation, theft, misuse, disclosure, loss or destruction of the technology, intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, as well as damage to or disruptions in our IT systems. We believe that we have a robust cybersecurity program that is aligned to international cybersecurity frameworks, and that we leverage industry best practices across people, processes and technologies in an attempt to mitigate cybersecurity threats. However, we may not be able to anticipate, detect, repel or implement effective preventative measures against all cybersecurity threats, particularly because the techniques used are increasingly sophisticated and constantly evolving. Attempts to gain unauthorized access to our IT systems or other attacks have in the past, in certain instances and to certain degrees, been successful (but have not caused significant harm), and may in the future be successful, and in some cases, we might be unaware of an incident or its magnitude and effects.

In addition, employees and former employees, in particular former employees who become employees of our competitors, customers, licensees or other third parties, including state actors, have in the past and may in the future misappropriate, use, publish or provide to our competitors, customers, licensees or other third parties, including state actors, our technology, intellectual property or other proprietary or confidential information. This risk is exacerbated as competitors for talent, particularly engineering talent, increasingly attempt to hire our employees. See also the Risk Factor titled *"We may not be able to attract and retain qualified employees, and our attempts to fully reopen our offices and operate under a hybrid working environment may not be successful."* Similarly, we provide access to certain of our technology, intellectual property and other proprietary or confidential information to our direct and indirect customers and licensees and certain of our consultants, who have in the past and may in the future wrongfully use such technology, intellectual property or information, or wrongfully disclose such technology, intellectual property or information to third parties, including our competitors or state actors. We also provide access to certain of our technology, intellectual property and other proprietary or confidential information to certain of our joint venture partners, including those affiliated with state actors and including in foreign jurisdictions where ownership restrictions may require us to take a minority ownership interest in the joint venture. Such joint venture partners may wrongfully use such technology, intellectual property or information, or wrongfully disclose such technology, intellectual property or information to third parties, including our competitors or state actors.

The misappropriation, theft, misuse, disclosure, loss or destruction of the technology, intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives, cause us to lose business, damage our reputation, subject us to legal or regulatory proceedings, cause us to incur other loss or liability and otherwise adversely affect our business. We expect to continue to devote significant resources to the security of our IT systems, and our technology, intellectual property and proprietary and confidential information.

Further, China has implemented, and other countries or regions may implement, cybersecurity laws that require our overall IT security environment to meet certain standards and/or be certified. Such laws may be complex, ambiguous and subject to interpretation, which may create uncertainty regarding compliance. As a result, our efforts to comply with such laws may be expensive and may fail, which could adversely affect our business, results of operations and cash flows.

RISKS RELATED TO HUMAN CAPITAL MANAGEMENT

We may not be able to attract and retain qualified employees, and our attempts to fully reopen our offices and operate under a hybrid working environment may not be successful.

Our future success depends upon the continued service of our executive officers and other key management and technical personnel, and on our ability to continue to identify, attract, retain and motivate them. Implementing our business strategy requires specialized engineering and other talent, as our revenues are highly dependent on technological and product innovations. In addition, in order to extend our business into certain new and expanded product areas and/or industries and applications beyond mobile handsets, we will be required to attract, retain and motivate engineering and other technical personnel with specialized skills in these areas, and these skills are in high demand among our competitors. The market for employees in our industry is extremely competitive, and competitors for talent, particularly engineering talent, increasingly attempt to hire, and to varying degrees have been successful in hiring, our employees or employment candidates, including by establishing or expanding local offices near our headquarters in San Diego, California. Further, the increased availability of remote working arrangements, largely driven by the COVID-19 pandemic, has expanded the pool of companies that can compete for our employees and employment candidates. A number of such competitors for talent are significantly larger than us and are able to offer compensation in excess of what we are able to offer or other benefits that we generally do not offer, such as the ability to permanently work from home. Further, existing immigration laws make it more difficult for us to recruit and retain highly skilled foreign national graduates of universities in the United States, making the pool of available talent even smaller. If we are unable to attract and retain qualified employees, our business may be harmed.

The COVID-19 pandemic caused us to modify our workforce practices, including having the vast majority of our employees work from home. As we reopen our offices, we intend to operate under a "hybrid" working environment, meaning that the majority of our employees will have the flexibility to work remotely at least some of the time, for the foreseeable future. The hybrid working environment may impair our ability to maintain our collaborative and innovative culture, and may cause disruptions among our employees, including decreases in productivity, challenges in communications between on-site and off-site employees and, potentially, employee dissatisfaction and attrition. If our attempts to safely reopen our offices and operate under a hybrid working environment are not successful, our business could be adversely impacted.

RISKS SPECIFIC TO OUR LICENSING BUSINESS

The continued and future success of our licensing programs requires us to continue to evolve our patent portfolio and to renew or renegotiate license agreements that are expiring.

We own a very strong portfolio of issued and pending patents related to 3G, 4G, 5G and other technologies. It is critical that we continue to evolve our patent portfolio, particularly in 5G. If we do not maintain a strong portfolio that is applicable to current and future standards, products and services, our future licensing revenues could be negatively impacted.

Our patent license agreements in effect that constitute a significant portion of our licensing revenues are effective for a specified term. To receive royalties after the expiration date of the specified term, we will need to extend or modify such license agreements or enter into new license agreements with such licensees. We might not be able to extend or modify license agreements, or enter into new license agreements, in the future without negatively affecting the material terms and conditions of our license agreements with such licensees, and such modifications or new agreements may negatively impact our revenues. In some circumstances, we may extend, modify or enter into new license agreements as a result of arbitration or litigation, and terms imposed by arbitrators or courts may be less favorable to us than existing terms and may impact the financial or other terms of license agreements not subject to the litigation or arbitration. If there is a delay in extending, modifying or entering into a new license agreement with a licensee, there would be a delay in our ability to recognize revenues related to that licensee's product sales. Further, if we are unable to reach agreement on such modifications or new agreements, it could result in patent infringement litigation with such licensees.

Efforts by some original equipment manufacturers (OEMs) to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business.

From time to time, companies initiate various strategies to attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property. These strategies have included: (i) litigation, often alleging infringement of patents held by such companies, patent misuse, patent exhaustion, patent invalidity or unenforceability of our patents or licenses, alleging that we do not license our patents on fair, reasonable and nondiscriminatory (FRAND) terms, or alleging some form of unfair competition or competition law violation;

(ii) taking positions contrary to our understanding (and/or the plain language) of their contracts with us; (iii) appeals to governmental authorities; (iv) collective action, including working with wireless operators, standards bodies, other like-minded companies and organizations, on both formal and informal bases, to adopt intellectual property policies and practices that could have the effect of limiting returns on intellectual property innovations; (v) lobbying governmental regulators and elected officials for the purpose of seeking the reduction of royalty rates or the base on which royalties are calculated, seeking to impose some form of compulsory licensing or weakening a patent holder's ability to enforce its rights or obtain a fair return for such rights; and (vi) attempts by licensees to shift their royalty obligation to their suppliers in order to lower the wholesale (i.e., licensee's) selling price on which the royalty is calculated.

In addition, certain licensees have disputed, underreported, underpaid, not reported or not paid royalties owed to us under their license agreements or reported to us in a manner that is not in compliance with their contractual obligations, and certain companies have yet to enter into or have delayed entering into or renewing license agreements with us for their use of our intellectual property, and they or others may engage in such behavior in the future. The fact that one or more licensees dispute, underreport, underpay, do not report or do not pay royalties owed to us may encourage other licensees to take similar actions or not renew their existing license agreements, and may encourage other licensees or unlicensed companies to delay entering into, or to not enter into, new license agreements. Further, to the extent such licensees and companies increase their device share, the negative impact of their underreporting, underpayment, non-payment or non-reporting on our business, revenues, results of operations, cash flows and financial condition will be exacerbated.

We have been in the past and are currently subject to various litigation and/or governmental investigations and proceedings. Certain of these matters are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We may become subject to other litigation or governmental investigations or proceedings in the future. Additionally, certain of our direct and indirect customers and licensees have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition. See also the Risk Factors below titled *"Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations" and "Our business may suffer as a result of adverse rulings in governmental investigations or proceedings."*

In addition, in connection with our participation in SDOs, we, like other patent owners, generally have made contractual commitments to such organizations to license those of our patents that would necessarily be infringed by standard-compliant products as set forth in those commitments (referred to as standard-essential patents). Some manufacturers and users of standard-compliant products advance interpretations of these commitments that are adverse to our licensing business, including interpretations that would limit the amount of royalties that we could collect on the licensing of our standard-essential patent portfolio.

Further, some third parties have proposed significant changes to existing intellectual property policies for implementation by SDOs and other industry organizations with the goal of significantly devaluing standard-essential patents. For example, some have put forth proposals which would require a maximum aggregate intellectual property royalty rate for the use of all standard-essential patents owned by all of the member companies to be applied to the selling price of any product implementing the relevant standard. They have further proposed that such maximum aggregate royalty rate be apportioned to each member company with standard-essential patents based upon the number of standard-essential patents held by such company. Others have proposed that injunctions should not be an available remedy for infringement of standard-essential patents and have made proposals that could severely limit damage awards and other remedies by courts for patent infringement (e.g., by limiting the base upon which the royalty rate may be applied). A number of these strategies are purportedly based on interpretations of the policies of certain SDOs concerning the licensing of patents that are or may be essential to industry standards and on our (or other companies') alleged failure to abide by these policies.

Some SDOs, courts and governmental agencies have adopted, and may in the future adopt, some or all of these interpretations or proposals in a manner adverse to our interests, including in litigation to which we may not be a party. Further, SDOs in certain countries may attempt to modify widely accepted standards and claim the resulting standard as their own.

We expect that such proposals, interpretations and strategies will continue in the future, and if successful, our business model would be harmed, either by limiting or eliminating our ability to collect royalties (or by reducing the royalties we can collect) on all or a portion of our standard-essential patent portfolio, limiting our return on investment with respect to new technologies, limiting our ability to seek injunctions against infringers of our standard-essential patents, constraining our ability to make licensing commitments when submitting our technologies for inclusion in future standards (which could make our technologies less likely to be included in such standards) or forcing us to work outside of SDOs or other industry groups to promote our new technologies, and our revenues, results of operations and cash flows could be negatively impacted. In addition, the legal and other costs associated with asserting or defending our positions have been and may in the future be significant. We expect that such challenges, regardless of their merits, will continue into the foreseeable future and will require the investment of substantial management time and financial resources.

Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations.

As described in the Risk Factor below titled "*Our business may suffer as a result of adverse rulings in governmental investigations or proceedings,*" we have been in the past and may in the future be subject to various governmental investigations and legal proceedings challenging our patent licensing (or chipset sales) practices. We are currently subject to certain governmental investigations and/or legal proceedings described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We believe that one intent of certain of these governmental investigations and legal proceedings has been to reduce the amount of royalties that licensees are required to pay to us for their use of our intellectual property.

If we were required to reduce the royalty rates in our patent license agreements, our revenues, earnings and cash flows would be negatively impacted absent a sufficient increase in the volume of sales of devices upon which royalties are paid. Similarly, if we were required to reduce the base on which our royalties are calculated, our revenues, results of operations and cash flows would be negatively impacted unless there was a sufficient increase in the volume of sales of devices upon which royalties are paid or we were able to increase our royalty rates to offset the decrease in revenues resulting from such lower royalty base (assuming the absolute royalty dollars were below any relevant royalty caps).

If we were required to grant patent licenses to chipset manufacturers (which could lead to implementing a more complex, multi-level licensing structure in which we license certain portions of our patent portfolio to chipset manufacturers and other portions to OEMs), we would incur additional transaction costs, which may be significant, and we could incur delays in recognizing revenues until license negotiations were completed. In addition, our licensing revenues and earnings would be negatively impacted if we were not able to obtain, in the aggregate, equivalent revenues under such a multi-level licensing structure.

If we were required to sell chipsets to OEMs that do not have a license to our patents, our licensing program could be negatively impacted by patent exhaustion claims raised by such unlicensed OEMs (i.e., claims that our sale of chipsets to such OEMs forecloses us from asserting any patents substantially embodied by the chipsets against such OEMs). Such sales would provide OEMs with a defense in the event we asserted our patents against them to obtain licensing revenue for those patents. This could have a material adverse effect on our licensing program and our results of operations, cash flows and financial condition.

To the extent that we were required to implement any of these new licensing and/or business practices, including by modifying or renegotiating our existing license agreements or pursuing other commercial arrangements, we would incur additional transaction costs, which may be significant, we could incur delays in recognizing revenues until license negotiations were completed, and our business, revenues, results of operations, cash flows and financial condition could be harmed. The impact of any such changes to our licensing practices could vary widely and by jurisdiction, depending on the specific outcomes and the geographic scope of such outcomes. In addition, if we were required to make modifications to our licensing practices in one jurisdiction, licensees or governmental agencies in other jurisdictions may attempt to obtain similar outcomes for themselves or for such other jurisdictions, as applicable, which would result in increased legal costs.

RISKS RELATED TO REGULATORY AND LEGAL CHALLENGES

Our business may suffer as a result of adverse rulings in governmental investigations or proceedings.

We have been in the past and are currently subject to various governmental investigations and proceedings. Certain of these matters are described more fully in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.” Key allegations or findings in those matters include or have in the past included, among others: that we violate FRAND licensing commitments by refusing to grant licenses to chipset manufacturers; that our royalty rates are too high; that the base on which our royalties are calculated should be something less than the wholesale (i.e., licensee’s) selling price of the applicable device (minus certain permitted deductions); that we unlawfully require customers to execute a patent license before we sell them cellular modem chipsets; that we have entered into exclusive agreements with chipset customers that foreclose competition; that we leverage our position in baseband chipsets in the RFFE space; and that we violate antitrust laws and engage in anticompetitive conduct and unfair methods of competition. We may become subject to other litigation or governmental investigations or proceedings in the future.

Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others: the loss of our ability to enforce one or more of our patents; injunctions; monetary damages, fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed OEMs or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. In addition, a governmental body in a particular country or region may successfully assert and impose remedies with effects that extend beyond the borders of that country or region. If some or all of our license agreements are declared invalid or unenforceable and/or we are required to renegotiate these license agreements, we may not receive, or may not be able to recognize, some or any licensing or royalty revenues under the impacted license agreements unless and until we enter into new license agreements; and even licensees whose license agreements are not impacted may demand to renegotiate their agreements or invoke the dispute resolution provision in their agreements, and we may not be able to recognize some or any licensing or royalty revenues under such agreements. The renegotiation of license agreements could result in terms that are less favorable to us than existing terms, or lead to arbitration or litigation to resolve the licensing terms, which could also be less favorable to us than existing terms, and each of which could take months or possibly years. Licensees may underreport, underpay, not report or not pay royalties owed to us pending the conclusion of such negotiations, arbitration or litigation. In addition, we may be sued for alleged overpayments of past royalties paid to us, including private antitrust actions seeking treble damages under U.S. antitrust laws. The occurrence of any of the above could have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition, and our stock price could decline, possibly significantly, in which case we may have to significantly cut costs and other uses of cash, including in research and development, significantly impairing our ability to maintain product and technology leadership and invest in next generation technologies. Further, depending on the breadth and severity of the circumstances above, we may have to reduce, suspend or eliminate our capital return programs, and our ability to timely pay our indebtedness may be impacted.

These challenges have required, and may in the future require, the investment of significant management time and attention and have resulted, and may in the future result, in significant legal costs.

RISKS RELATED TO INDUSTRY DYNAMICS AND COMPETITION

Our revenues depend on our customers' and licensees' sales of products and services based on CDMA, OFDMA and other communications technologies, including 5G, and customer demand for our products based on these technologies.

We develop, patent and commercialize technology and products based on CDMA, OFDMA and other communications technologies, which are primarily wireless. We depend on our customers and licensees to develop devices and services based on these technologies with value-added features to drive consumer demand for new 3G/4G and 3G/4G/5G multimode devices, as well as 4G single-mode devices, and to establish the selling prices for such devices. Further, the timing of our shipments of our products is dependent on the timing of our customers' and licensees' deployments of new devices and services based on these technologies. Increasingly, we also depend on operators of wireless networks, our customers and licensees and other third parties to incorporate these technologies into new device types and into industries and applications beyond mobile handsets, such as automotive and IoT, among others.

We have historically been successful during wireless technology transitions, including 3G, 4G and now 5G. Commercial deployments of 5G networks and devices have begun and will continue. However, the timing and scale of such deployments, in certain regions, have been and may in the future be delayed due to the COVID-19 pandemic.

Our revenues and growth in revenues could be negatively impacted, our business may be harmed and our substantial investments in these technologies may not provide us an adequate return, if: our customers' and licensees' revenues and sales of products, particularly premium-tier products, and services using these technologies, and average selling prices of such products, decline due to, for example, the maturity of smartphone penetration in developed regions, including China; we do not continue to maintain our intellectual property and technical leadership in 5G, including in ongoing 5G standardization efforts; we are unable to drive the adoption of our products into networks and devices, including devices beyond mobile handsets; or consumers' rates of replacement of smartphones and other computing devices decline.

Our industry is subject to intense competition in an environment of rapid technological change. Our success depends in part on our ability to adapt to such change and compete effectively; and such change and competition could result in decreased demand for our products and technologies or declining average selling prices for our products or those of our customers or licensees.

Our products and technologies face significant competition. Competition may intensify as our current competitors expand their product offerings, improve their products or reduce the prices of their products as part of a strategy to maintain existing business and customers or attract new business and customers, as new opportunities develop, and as new competitors enter the industry. Competition in wireless communications is affected by various factors that include, among others: OEM concentrations; vertical integration; competition in certain geographic regions; government intervention or support of national industries or competitors; the ability to maintain product differentiation as the result of evolving industry standards and speed of technological change (including the transition to smaller geometry process technologies and the demand for always on, always connected capabilities); access to capacity in the supply chain; and value-added features that drive selling prices and consumer demand for new 3G/4G and 3G/4G/5G multimode devices, as well as 3G and 4G single-mode devices.

We anticipate that additional competitors will introduce products as a result of growth opportunities in wireless communications, the trend toward global expansion by foreign and domestic competitors, and technological and public policy changes. Additionally, the semiconductor industry has experienced and may continue to experience consolidation, which could result in significant changes to the competitive landscape. For example, if any key supplier of technologies and intellectual property to the semiconductor industry was sold to one of our competitors, it could negatively affect our ability to procure or license such technologies and intellectual property in the future, at all or upon acceptable terms which could have wide-ranging impacts on our business and operations.

We expect that our future success will depend on, among other factors, our ability to:

- differentiate our integrated circuit products with innovative technologies across multiple products and features (e.g., modem, radio frequency front-end (RFFE), including millimeter wave (mmWave), graphics and other processors, camera and connectivity) and with smaller geometry process technologies that drive both performance and lower power consumption;

- develop and offer integrated circuit products at competitive cost and price points to effectively cover all geographic regions and all device tiers;
- continue to be a leader in mobile, and drive the adoption of our technologies and integrated circuit products, including RFFE, into the most popular device models and across a broad spectrum of devices in mobile, such as smartphones, tablets, laptops and other mobile computing devices;
- increase or accelerate adoption of our technologies and products in industries and applications outside of mobile handsets, including automotive and IoT;

- maintain or accelerate demand for our integrated circuit products at the premium device tier, while also driving the adoption of our products into high, mid- and low-tier devices across all regions;
- remain a leader in 5G (and 4G) technology development, standardization, intellectual property creation and licensing, and develop, commercialize and remain a leading supplier of 5G (and 4G) integrated circuit products, including RFFE products;
- maintain access to sufficient capacity in the supply chain relative to our competitors to meet customer demand;
- create standalone value and contribute to the success of our existing businesses through acquisitions, joint ventures and other strategic transactions, and by developing customer, licensee, vendor, distributor and other channel relationships in new industries and applications;
- identify potential acquisition targets that will grow or sustain our business or address strategic needs, reach agreement on terms acceptable to us, close the transactions and effectively integrate these new businesses, products and technologies;
- provide leading products and technologies to OEMs, high level operating systems (HLOS) providers, operators, cloud providers and other industry participants as competitors, new industry entrants and other factors continue to affect the industry landscape;
- be a preferred partner and sustain preferred relationships providing integrated circuit products that support multiple operating system and infrastructure platforms to industry participants that effectively commercialize new devices using these platforms; and
- continue to develop brand recognition to effectively compete against better known companies in computing and other consumer driven segments and to deepen our presence in significant emerging regions and China.

We compete with many different semiconductor companies, ranging from multinational companies with integrated research and development, manufacturing, sales and marketing organizations across a broad spectrum of product lines, to companies that are focused on a single application, industry or standard product, including those that produce products for mobile handsets, automotive and IoT, among others. Most of these competitors compete with us with respect to some, but not all, of our businesses or product lines. Companies that design integrated circuits based on CDMA, OFDMA, Wi-Fi or their derivatives are generally competitors or potential competitors. Examples (some of which are strategic partners of ours in other areas) include Broadcom, MediaTek, Nvidia, NXP Semiconductors, Qorvo, Samsung, Skyworks, Texas Instruments and UNISOC (formally known as Spreadtrum Communications). Some of these current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to use our competitors' integrated circuit products, to utilize their own internally-developed integrated circuit products and/or sell such products to others, or to utilize alternative technologies; lower cost structures or a willingness and ability to accept lower prices or lower margins for their products, particularly in China; foreign government support of other technologies, competitors or OEMs that sell devices that do not contain our integrated circuit products; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and OEMs in certain geographic regions (such as China); more experience in industries and applications beyond mobile handsets (such as automotive and IoT); and a more established presence in certain regions.

In addition, certain of our largest integrated circuit customers have in the past utilized, currently utilize and may in the future utilize our competitors' integrated circuit products in some (or all) of their devices, rather than our products. Further, certain of those customers have developed, are developing or may develop their own integrated circuit products (effectively making them competitors), which they have in the past utilized, currently utilize and may in the future utilize in some (or all) of their devices, rather than our products. See also the Risk Factor titled "*Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products)*." Further, political actions, including trade and/or national security protection policies, or other actions by governments, particularly the U.S. and Chinese governments, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our customers or suppliers, limit, prevent or discourage certain of our customers or suppliers from transacting business with us, or make it more expensive to do so. This could advantage our competitors by enabling them with increased sales, economies of scale, operating income and/or cash flows and/or enable critical technology transfer, allowing them to increase their investments in technology development, research and development and commercialization of products. See also the Risk Factor titled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.*" Further, certain of our competitors develop and sell multiple components (including integrated circuit products) for use in devices and sell those components together to OEMs. Our competitors' sales of multiple components put us (and our discrete integrated circuit products) at a competitive disadvantage. Certain of our competitors also develop and sell infrastructure equipment for wireless networks and can optimize their integrated circuit products to perform on such networks to a degree that we are not able to, which again puts us at a competitive disadvantage.

Competition in any or all product tiers may result in the loss of business or customers, which would negatively impact our business, revenues, results of operations, cash flows and financial condition. Such competition may also reduce average selling prices for our chipset products or the products of our customers and licensees. Certain of these dynamics are particularly pronounced in emerging regions and China where competitors may have lower cost structures or may have a willingness and ability to accept lower prices or lower margins on their products. Reductions in the average selling prices of our chipset products, without a corresponding increase in volumes, would negatively impact our revenues, and without corresponding decreases in average unit costs, would negatively impact our margins. In addition, reductions in the average selling prices of our licensees' products, unless offset by an increase in volumes, would generally decrease total royalties payable to us, negatively impacting our licensing revenues.

RISKS RELATED TO PRODUCT DEFECTS OR SECURITY VULNERABILITIES

Failures in our products, or in the products of our customers or licensees, including those resulting from security vulnerabilities, defects or errors, could harm our business.

Our products (including for purposes of this Risk Factor, related software) are complex and may contain defects, errors or security vulnerabilities, or experience failures or unsatisfactory performance, due to any number of issues, including issues in materials, design, fabrication, packaging and/or use within a system. Development of products in new domains of technology, such as the transition to 5G, and the migration to integrated circuit technologies with smaller geometric feature sizes, increases complexity and adds risk to manufacturing yields and reliability, and increases the likelihood of product defects, errors or security vulnerabilities. Defects, errors, security vulnerabilities or other unintended functionality could also be introduced into our products by cyber-attacks or other actions by malicious actors, either directly or through third-party products or software used in our products or IT infrastructure (including applications). Further, because of the complexity of our products, defects, errors or security vulnerabilities might only be detected when the products are in use. Risks associated with product or technology defects, errors or security vulnerabilities are exacerbated by the fact that our customers typically integrate our products into consumer and other devices.

The use of devices containing our products to interact with untrusted systems or otherwise access untrusted content creates a risk of exposing the system hardware and software in those devices to malicious attacks. Further, security vulnerabilities in our products or the technologies we use could expose our customers, or end users of our customers' products, to hackers or other unscrupulous third parties who develop and deploy malware that could attack our products or our customers' products or IT infrastructure. Such attacks could result in the disruption of our customers' businesses or the misappropriation, theft, misuse, disclosure, loss or destruction of the technology or intellectual property, or the proprietary, confidential or personal information, of our customers, their employees or the end users of our customers' devices. While we continue to focus on this issue and take measures to safeguard our products from cybersecurity threats, device capabilities continue to evolve, enabling more elaborate functionality and applications, and increasing the risk of security failures, and techniques used to perpetrate cybersecurity attacks are increasingly sophisticated and constantly evolving. See also the Risk Factor titled "*Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information*."

Our products may be responsible for critical functions in our customers' products and networks. Failure of our products to perform to specifications, or other product defects, errors or security vulnerabilities, could lead to substantial damage to the products we sell to our customers, the devices into which our products are integrated and the end users of such devices, and, potentially, to our customers' IT infrastructure. Such defects, errors or security vulnerabilities could give rise to significant costs, including costs related to developing solutions, recalling products, repairing or replacing defective products, writing down defective inventory, or indemnification obligations under our agreements, and could result in the loss of sales and divert the attention of our engineering personnel from our product development efforts. In addition, defects, errors or security vulnerabilities in our products could result in failure to achieve market acceptance, a loss of design wins, a shifting of business to our competitors, and litigation or regulatory action against us, and could harm our reputation, our relationships with customers and partners and our ability to attract new customers, as well as the perceptions of our brand. Other potential adverse impacts of product defects, errors or security vulnerabilities include shipment delays, write-offs of property, plant and equipment and intangible assets, and losses on unfavorable purchase commitments. In addition, defects, errors or security vulnerabilities in the products of our customers or licensees could cause a delay or decrease in demand for the products into which our products are integrated, and thus for our products.

In addition, the occurrence of defects, errors or security vulnerabilities may give rise to product liability claims, particularly if such defects, errors or security vulnerabilities in our products or the technology we use, or the products into which they are integrated, result in personal injury or death, and could result in significant costs, expenses and losses. If a product liability claim is brought against us, the cost of defending the claim could be significant, and could divert the efforts of our technical and management personnel and harm our business, even if we are successful. We may be named in product liability claims even if there is no evidence that our products caused the damage in question, and even though we may have indemnity from our customers, and such claims could result in significant costs and expenses. Further, our business liability insurance may be inadequate, or future coverage may be unavailable on acceptable terms, which could adversely impact our financial results. The above is exacerbated by the fact that our products may be used, and perform critical functions, in various high-risk applications such as (i) automobiles, including autonomous driver assistance programs; (ii) cameras and artificial intelligence, including home and enterprise security; (iii) home automation, including smoke and noxious gas detectors; (iv) medical condition monitoring; (v) location and asset tracking and management, including wearables for child safety and elderly health; (vi) robotics, including public safety drones and autonomous municipality vehicles; and (vii) extended reality (XR) for treatment of phobias or PTSD, early detection of disorders or special needs, among others.

Accordingly, defects, errors or security vulnerabilities in our products or the technologies we use could have an adverse impact on us, on our customers and the end users of our customers' products. If any of these risks materialize, there could be a material adverse effect on our business, results of operations and financial condition.

RISKS RELATED TO INTELLECTUAL PROPERTY

The enforcement and protection of our intellectual property may be expensive, could fail to prevent misappropriation or unauthorized use of our intellectual property, could result in the loss of our ability to enforce one or more patents, and could be adversely affected by changes in patent laws, by laws in certain foreign jurisdictions that may not effectively protect our intellectual property and by ineffective enforcement of laws in such jurisdictions.

We rely primarily on patent, copyright, trademark and trade secret laws, as well as nondisclosure and confidentiality agreements, international treaties and other methods, to protect our intellectual property, including our patent portfolio. Policing unauthorized use of our products, technologies and intellectual property is difficult and time consuming. The steps we have taken have not always prevented, and we cannot be certain the steps we will take in the future will prevent, the misappropriation or unauthorized use of our products, technologies or intellectual property, particularly in foreign countries where the laws may not protect our rights as fully or as readily as U.S. laws or where the enforcement of such laws may be lacking or ineffective. See also the Risk Factor titled *"Our business and operations could suffer in the event of security breaches of our IT systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information."*

Some industry participants who have a vested interest in devaluing patents in general, or standard-essential patents in particular, have mounted attacks on certain patent systems, increasing the likelihood of changes to established patent laws. In the United States, there is continued discussion regarding potential patent law changes and current and potential future litigation regarding patents, the outcomes of which could be detrimental to our licensing business. The laws in certain foreign countries in which our products are or may be manufactured or sold, including certain countries in Asia, may not protect our intellectual property rights to the same extent as the laws in the United States. We cannot predict with certainty the long-term effects of any potential changes. In addition, we cannot be certain that the laws and policies of any country or the practices of any standards bodies, foreign or domestic, with respect to intellectual property enforcement or licensing or the adoption of standards, will not be changed in the future in a way detrimental to our licensing program or to the sale or use of our products or technologies.

We have had and may in the future have difficulty in certain circumstances in protecting or enforcing our intellectual property and contracts, including collecting royalties for use of our patent portfolio due to, among others: refusal by certain licensees to report and pay all or a portion of the royalties they owe to us; policies or political actions of governments, including trade protection and national security policies; challenges to our licensing practices under competition laws; adoption of mandatory licensing provisions by foreign jurisdictions; failure of foreign courts to recognize and enforce judgments of contract breach and damages issued by courts in the United States; and challenges before competition agencies to our licensing business and the pricing and integration of additional features and functionality into our chipset products. See also the Risk Factors titled "*Efforts by some original equipment manufacturers (OEMs) to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business*" and "*Our business may suffer as a result of adverse rulings in governmental investigations or proceedings*."

We have engaged in litigation and arbitration in the past and may need to further litigate or arbitrate in the future to enforce our contract and intellectual property rights, protect our trade secrets or determine the validity and scope of proprietary rights of others. As a result of any such litigation or arbitration, we could lose our ability to enforce one or more patents, portions of our license agreements could be determined to be invalid or unenforceable (which may in turn result in other licensees either not complying with their existing license agreements or initiating litigation or arbitration), license terms (including but not limited to royalty rates for the use of our intellectual property) could be imposed that are less favorable to us than existing terms, and we could incur substantial costs. Any action we take to enforce our contract or intellectual property rights could be costly and could absorb significant management time and attention, which, in turn, could negatively impact our results of operations and cash flows. Further, even a positive resolution to our enforcement efforts may take time to conclude, which may reduce our revenues and cash resources available for other purposes, such as research and development, in the periods prior to conclusion.

Additionally, although our license agreements generally provide us with the right to audit the books and records of licensees, audits can be expensive, time consuming, incomplete and subject to dispute. Further, certain licensees may not comply with the obligation to provide full access to their books and records. To the extent we do not aggressively enforce our rights under our license agreements, licensees may not comply with their existing license agreements, and to the extent we do not aggressively pursue unlicensed companies to enter into license agreements with us for their use of our intellectual property, other unlicensed companies may not enter into license agreements. Similarly, we provide access to certain of our intellectual property and proprietary and confidential business information to our direct and indirect customers and licensees, who have in the past and may in the future wrongfully use such intellectual property and information or wrongfully disclose such intellectual property and information to third parties, including our competitors. See also the Risk Factor titled "*Efforts by some original equipment manufacturers (OEMs) to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in* *legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business*."

Claims by other companies that we infringe their intellectual property could adversely affect our business.

From time to time, companies have asserted, and may again assert, patent, copyright or other intellectual property claims against our products or products using our technologies or other technologies used in our industry. These claims have resulted and may again result in our involvement in litigation. We may not prevail in such litigation given, among other factors, the complex technical issues and inherent uncertainties in intellectual property litigation. If any of our products were found to infringe another company's intellectual property, we could be subject to an injunction or be required to redesign our products, or to license such intellectual property or pay damages or other compensation to such other company (any of which could be costly). If we are unable to redesign our products, license such intellectual property used in our products or otherwise distribute our products (e.g., through a licensed supplier), we could be prohibited from making and selling our products. Similarly, our suppliers could be found to infringe another company's intellectual property, and such suppliers could then be enjoined from providing products or services to us.

In any potential dispute involving us and another company's patents or other intellectual property, our chipset foundries, semiconductor assembly and test providers and customers could also become the targets of litigation. We are contingently liable under certain product sales, services, license and other agreements to indemnify certain customers, chipset foundries and semiconductor assembly and test service providers against certain types of liability and damages arising from qualifying claims of patent infringement by products sold by us, or by intellectual property provided by us to our chipset foundries and semiconductor assembly and test service providers. Reimbursements under indemnification arrangements could have an adverse effect on our results of operations and cash flows. Furthermore, any such litigation could severely disrupt the supply of our products and the businesses of our chipset customers and their customers, which in turn could harm our relationships with them and could result in a decline in our chipset sales or a reduction in our licensees' sales, causing a corresponding decline in our chipset or licensing revenues. Any claims, regardless of their merit, could be time consuming to address, result in costly litigation, divert the efforts of our technical and management personnel or cause product release or shipment delays, any of which could have an adverse effect on our results of operations and cash flows.

We may continue to be involved in litigation and may have to appear in front of administrative bodies (such as the United States International Trade Commission) to defend against patent assertions against our products by companies, some of whom are attempting to gain competitive advantage or leverage in licensing negotiations. We may not be successful in such proceedings, and if we are not, the range of possible outcomes is very broad and may include, for example, monetary damages or fines or other orders to pay money, royalty payments, injunctions on the sale of certain of our integrated circuit products (or on the sale of our customers' devices using such products) or the issuance of orders to cease certain conduct or modify our business practices. Further, a governmental body in a particular country or region may assert, and may be successful in imposing, remedies with effects that extend beyond the borders of that country or region. In addition, a negative outcome in any such proceeding could severely disrupt the business of our chipset customers and their wireless operator customers, which in turn could harm our relationships with them and could result in a decline in our chipset sales or a reduction in our licensees' sales, causing corresponding declines in our chipset or licensing revenues.

Certain legal matters, which may include certain claims by other companies that we infringe their intellectual property, are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

Our use of open source software may harm our business.

Certain of our software and our suppliers' software may contain or may be derived from "open source" software, and we have seen, and believe that we will continue to see, customers request that we develop products, including software associated with our integrated circuit products, that incorporate open source software elements and operate in an open source environment, which, under certain open source licenses, may offer accessibility to a portion of our products' source code and may expose our related intellectual property to adverse licensing conditions. Licensing of such software may impose certain obligations on us if we were to distribute derivative works of that software. For example, these obligations may require us to make source code for the derivative works available to our customers in a manner that allows them to make such source code available to their customers or license such derivative works under a particular type of license that is different than what we customarily use to license our software. Furthermore, in the course of product development, we may make contributions to third-party open source projects that could subject our intellectual property to adverse licensing conditions. For example, to encourage the growth of a software ecosystem that is interoperable with our products, we may need to contribute certain implementations under the open source licensing terms that govern such projects, which may adversely impact our associated intellectual property.

Developing open source products, while adequately protecting the intellectual property upon which our licensing program depends, may prove burdensome and time-consuming under certain circumstances, thereby placing us at a competitive disadvantage, and we may not adequately protect our intellectual property. Also, our use and our customers' use of open source software may subject our products and our customers' products to governmental and third-party scrutiny and delays in product certification, which could cause customers to view our products as less desirable than our competitors' products.

GENERAL RISK FACTORS

We operate in the highly cyclical semiconductor industry, which is subject to significant downturns. We are also susceptible to declines in global, regional and local economic conditions generally. Our stock price and financial results are subject to substantial quarterly and annual fluctuations due to these dynamics, among others.

The semiconductor industry is highly cyclical, volatile, subject to downturns and characterized by constant and rapid technological change, price erosion, evolving technical standards, frequent new product introductions, short product life cycles and fluctuations in product supply and demand. Periods of downturns have been characterized by diminished demand for end-user products, high inventory levels, excess or obsolete inventory adjustments, underutilization of manufacturing capacity, changes in revenue mix and erosion of average selling prices. We expect our business to continue to be subject to such cyclical downturns. Consequently, our revenues may decline, and our results of operations and financial condition may be adversely impacted.

A decline in global, regional or local economic conditions or a slow-down in economic growth, particularly in geographic regions with high concentrations of wireless voice and data users or high concentrations of our customers or licensees, could also have adverse, wide-ranging effects on our business and financial results, including: a decrease in demand for our products and technologies; a decrease in demand for the products and services of our customers or licensees; the inability of our suppliers to deliver on their supply commitments to us, our inability to supply our products to our customers and/or the inability of our customers or licensees to supply their products to end users; the insolvency of key suppliers, customers or licensees; delays in reporting or payments from our customers or licensees; failures by counterparties; and/or negative effects on wireless device inventories. In addition, our customers' and licensees' ability to purchase or pay for our products and intellectual property and network operators' ability to upgrade their wireless networks could be adversely affected, potentially leading to a reduction, cancellation or delay of orders for our products.

Our stock price and financial results have fluctuated in the past and are likely to fluctuate in the future. Factors that may have a significant impact on the market price of our stock and our financial results include those identified above and throughout this Risk Factors section, as well as; volatility of the stock market in general and technology and semiconductor companies in particular; announcements concerning us, our suppliers, our competitors or our customers or licensees; and variations between our actual financial results or guidance and expectations of securities analysts or investors, among others. In the past, securities class action litigation has been brought against companies following periods of volatility in the market price of their securities, among other reasons. We are and may in the future be the target of securities litigation. Securities litigation could result in substantial uninsured costs and divert management's attention and our resources. Certain legal matters, including certain securities litigation brought against us, are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

Our business may suffer due to the impact of, or our failure to comply with, the various existing, new or amended laws, regulations, policies or standards to which we are subject.

Our business and products, and those of our customers and licensees, are subject to various laws, rules and regulations globally as well as government policies and the specifications of international, national and regional communications standards bodies (collectively, Regulations). These include, among others: Regulations affecting patent licensing practices; antitrust, competition and competitive business practices; the flow of funds out of certain countries (e.g., China); cybersecurity; import and export regulations such as the U.S. Export Administration Regulations administered by the U.S. Department of Commerce; protection of intellectual property; trade and trade protection including tariffs; foreign policy and national security; environmental protection (including climate change), health and safety; supply chain, responsible sourcing, including the use of conflict minerals, and human rights; spectrum availability and license issuance; adoption of standards; taxation; privacy and data protection; labor, employment and human capital; corporate governance; public disclosure; or business conduct. Compliance with, or changes in the interpretation of, existing Regulations, the adoption of new Regulations, changes in the oversight of our activities by governments or standards bodies, or rulings in court, regulatory, administrative or other proceedings relating to such Regulations, including, among others, could have an adverse effect on our business and results of operations. See also the Risk Factors titled "*Our business may suffer as a result of adverse rulings in governmental investigations or proceedings,*" "*Changes in our patent licensing practices, whether due to governmental investigations, legal challenges or otherwise, could adversely impact our business and results of operations,*" *"A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions,"* "*There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model; environmental compliance and liability; impacts related to climate change; exposure to natural disasters, health* *crises and cyber-attacks; timely supply of equipment and materials; and various manufacturing issues," and "Tax liabilities could adversely affect our results of operations."*

Regulations are complex and changing (which may create uncertainty regarding compliance), are subject to varying interpretations, and their application in practice may evolve over time. As a result, our efforts to comply with Regulations may fail, particularly if there is ambiguity as to how they should be applied in practice. Failure to comply with any Regulation may adversely affect our business, results of operations and cash flows. New Regulations, or evolving interpretations thereof, may cause us to incur higher costs as we revise current practices, policies or procedures and may divert management time and attention to compliance activities.

There are risks associated with our debt.

Our outstanding debt and any additional debt we incur may have negative consequences on our business, including, among others: requiring us to use cash to pay the principal of and interest on our debt, thereby reducing the amount of cash available for other purposes; limiting our ability to obtain additional financing for working capital, capital expenditures, acquisitions, stock repurchases, dividends, general corporate or other purposes; and limiting our flexibility in planning for, or reacting to, changes in our business, industries or the market. Our ability to make payments of principal and interest on our indebtedness depends upon our future performance, which is subject to economic and political conditions, industry cycles and financial, business and other factors, many of which are beyond our control. If we are unable to generate sufficient cash flow from operations to service our debt, we may be required to, among other things: refinance or restructure all or a portion of our debt; reduce or delay planned capital or operating expenditures; reduce, suspend or eliminate our dividend payments and/or our stock repurchase program; or sell selected assets. Such measures might not be sufficient to enable us to service our debt. In addition, any such refinancing, restructuring or sale of assets might not be available on economically favorable terms or at all, and if prevailing interest rates at the time of any such refinancing or restructuring are higher than our current rates, interest expense related to such refinancing or restructuring would increase. Further, if there are adverse changes in the ratings assigned to our debt securities by credit rating agencies, our borrowing costs, our ability to access debt financing in the future and the terms of such debt could be adversely affected.

Tax liabilities could adversely affect our results of operations.

We are subject to income taxes in the United States and numerous foreign jurisdictions. Significant judgment is required in determining our provision for income taxes. We regularly are subject to examination of our tax returns and reports by taxing authorities in the United States federal jurisdiction and various state and foreign jurisdictions, most notably in countries where we earn a routine return and the tax authorities believe substantial value-add activities are performed, as well as countries where we own intellectual property. The final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provisions and accruals. In such case, our income tax provision, results of operations and cash flows in the period or periods in which that determination is made could be negatively affected.

Tax rules may change in a manner that adversely affects our future reported results of operations or the way we conduct our business. In response to the 2017 Tax Cuts and Jobs Act and to better align our profits with our activities, we implemented certain restructuring in fiscal 2018 and 2019. After our restructuring, most of our income is taxable in the United States with a significant portion qualifying for preferential treatment as FDII (foreign-derived intangible income). Beginning in fiscal 2027, the effective tax rate for FDII increases from 13% to 16%. Further, if U.S. tax rates increase and/or the FDII deduction is eliminated or reduced, both of which have been proposed by the current U.S. presidential administration and Congress, our provision for income taxes, results of operations and cash flows would be adversely (potentially materially) affected beginning as early as the first quarter of fiscal 2022. Also, if our customers move manufacturing operations to the United States, our FDII deduction may be reduced.

We have tax incentives in Singapore that require we meet specified employment and other criteria. Although our profit in Singapore has declined as a result of our 2018 restructuring and such tax incentives were not significant beginning in fiscal 2019, failure to meet these incentive requirements through March 2022 could require us to refund previously realized material tax benefits for 2017 and 2018.

Further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project that was undertaken by the Organization for Economic Co-operation and Development (OECD). The OECD, which represents a coalition of member countries, recommended changes to numerous long-standing tax principles related to transfer pricing and continues to develop new proposals including allocating greater taxing rights to countries where customers are located and establishing a minimum tax on global income. These changes, as adopted by countries, may increase tax uncertainty and may adversely affect our provision for income taxes, results of operations and cash flows.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

At September 26, 2021, we occupied the following facilities (square footage in millions):

	United States	Other Countries	Total
Owned facilities	4.5	0.3	4.8
Leased facilities	1.0	6.4	7.4
Total	5.5	6.7	12.2

Our headquarters and certain research and development and network management hub operations are located in San Diego, California. We also operate leased manufacturing facilities in Germany, China and Singapore; and we own and lease properties around the world for use as sales and administrative offices and research and development centers, primarily in the United States, India and China. Our facility leases expire at varying dates through 2032, not including renewals that are at our option. Several other owned and leased facilities are under construction totaling approximately 960 thousand additional square feet, primarily related to the construction of new facilities in India and Taiwan.

We do not identify or allocate facilities by operating segment. In response to the COVID-19 pandemic, beginning in fiscal 2020, we modified certain of our workforce practices, such as having the vast majority of our employees work from home. Such changes have impacted the physical utilization of certain of our non-manufacturing facilities during both fiscal 2021 and 2020; however, we believe that collectively our facilities are suitable and adequate for our present purposes. We have commenced a phased approach to returning our employees onsite, which included modifications to certain of our facilities as we adapt to a hybrid work environment. We are utilizing the feedback and insights gained through such phased approach taken to reopening our offices to assess the suitability, adequacy, productive capacity and utilization of our existing principal properties, which may result in changes to our physical property needs in the future. Information related to our additional capital requirements is provided in this Annual Report in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in the "Liquidity and Capital Resources" section under the heading "Additional Capital Requirements." Additional information on net property, plant and equipment by geography is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information."

Item 3. Legal and Regulatory Proceedings

Information regarding legal and regulatory proceedings is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We are also engaged in numerous other legal actions arising in the ordinary course of our business (such as, for example, proceedings relating to employment matters or the initiation or defense of proceedings relating to intellectual property rights), and while there can be no assurance, we believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information and Dividends

Our common stock is traded on the NASDAQ Global Select Market (NASDAQ) under the symbol "QCOM." At November 1, 2021, there were 6,511 holders of record of our common stock.

We intend to continue to pay quarterly cash dividends, subject to capital availability and our view that cash dividends are in the best interests of our stockholders. Future dividends may be affected by, among other items, our views on potential future capital availability and requirements, including those relating to research and development, creation and expansion of sales and distribution channels, investments and acquisitions, legal and regulatory risks, withholding of payments by one or more of our significant licensees and/or customers, fines and/or adverse rulings by government agencies, courts or arbitrators in legal or regulatory matters, stock repurchase programs, debt issuances, changes in federal, state or foreign income tax law, trade and/or national security protection policies, volatility in economies and financial markets globally and changes to our business model.

Issuer Purchases of Equity Securities

Our purchases of our equity securities in the fourth quarter of fiscal 2021 were:

	Total Number of Shares Purchased	Average Price Paid Per Share (1)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (2)
	(In thousands)		(In thousands)	(In millions)
June 28, 2021 to July 25, 2021	—	$ —	—	$ 2,019
July 26, 2021 to August 22, 2021	1,247	146.31	1,247	1,836
August 23, 2021 to September 26, 2021	4,164	141.32	4,164	1,248
Total	5,411		5,411	

(1) Average Price Paid Per Share excludes cash paid for commissions.

(2) On July 26, 2018, we announced a stock repurchase program authorizing us to repurchase up to $30.0 billion of our common stock. On October 12, 2021, we announced a new $10.0 billion stock repurchase authorization, which is in addition to the remaining repurchase authority of $0.9 billion under the aforementioned program. The stock repurchase programs have no expiration date. Since September 26, 2021, we repurchased and retired 5.4 million shares of common stock for $703 million. Shares withheld to satisfy statutory tax withholding requirements related to the vesting of share-based awards are not issued or considered stock repurchases under our stock repurchase program and, therefore, are excluded from the table above.

Unregistered Sales of Equity Securities

In January 2021, we entered into an Agreement and Plan of Merger (the Merger Agreement) for the acquisition of NuVia, Inc. (NUVIA), which transaction closed in March 2021. Pursuant to the Merger Agreement, we are obligated to issue shares of our common stock to three specific founders of NUVIA and certain affiliated entities of such founders from time to time upon the satisfaction of certain conditions specified in the Merger Agreement. During the quarter ended September 26, 2021, we issued an aggregate of 104,499 additional shares of our common stock to the three founders of NUVIA and their affiliates, each of whom had advised us that he or such entity was an accredited investor. These shares were issued in transactions not involving a public offering pursuant to the exemption from registration set forth in Section 4(a)(2) of the Securities Act.

Item 6. (Reserved)

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

In addition to historical information, the following discussion contains forward-looking statements that are subject to risks and uncertainties. Actual results may differ materially from those referred to herein due to a number of factors, including but not limited to the risks described in “Part I, Item 1A. Risk Factors” and elsewhere in this Annual Report.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included in “Part II, Item 8. Financial Statements and Supplementary Data” of this Annual Report.

The following section generally discusses fiscal 2021 and 2020 items and year-to-year comparisons between fiscal 2021 and 2020. Discussions of fiscal 2019 items and year-to-year comparisons between fiscal 2020 and 2019 that are not included in this Annual Report can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of our Annual Report on Form 10-K for the fiscal year ended September 27, 2020.

Fiscal 2021 Overview and Other Recent Events

Revenues were $33.6 billion, an increase of 43% compared to revenues of $23.5 billion in fiscal 2020, with net income of $9.0 billion, an increase of 74% compared to net income of $5.2 billion in fiscal 2020. Highlights from fiscal 2021 and other recent events included:

- QCT revenues increased by 64% in fiscal 2021 compared to the prior year, primarily due to an increase in demand for 5G products across handsets and RFFE, in part reflecting a recovery from the negative impacts of COVID-19, along with higher automotive and IoT revenues.
- QTL revenues increased by 26% in fiscal 2021 compared to the prior year, primarily due to an increase in estimated sales of 3G/4G/5G-based multimode products, in part reflecting a recovery from the negative impacts of COVID-19.
- QSI earnings before income taxes increased by $927 million compared to the prior year, primarily due to higher net gains on investments.
- On March 16, 2021, we completed the acquisition of NUVIA for $1.1 billion, net of cash acquired. NUVIA has certain in-process technologies and is comprised of a CPU (central processing unit) and technology design team with expertise in high performance processors, SoC (system-on-chip) and power management for compute-intensive devices and applications. Upon completion of development, NUVIA's technologies are expected to be integrated into certain QCT products.
- On March 26, 2021, the FTC's deadline for filing a petition for certiorari with the U.S. Supreme Court to seek review of the Ninth Circuit's decision in our favor in *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated* expired. The case is now over.
- In October 2021, we and SSW Partners, a New York-based investment partnership, entered into a definitive agreement to acquire Veoneer, Inc. (Veoneer) for $37.00 per share in cash, which values the estimated total cash consideration to be paid to Veoneer's shareholders at approximately $4.5 billion. At closing, SSW Partners will acquire all of the outstanding capital stock of Veoneer, shortly after which it will sell Veoneer's Arriver business to Qualcomm and retain Veoneer's Tier-1 automotive supplier businesses. Following the close of the Arriver business sale, we intend to incorporate Arriver's computer vision, drive policy and driver assistance technologies into our Snapdragon automotive platform to deliver an open and competitive ADAS platform for automakers and Tier-1 automotive suppliers. Subject to the satisfaction of closing conditions, the acquisition is expected to close in 2022.

Our Business and Operating Segments

We develop and commercialize foundational technologies and products used in mobile devices and other wireless products. We derive revenues principally from sales of integrated circuit products and licensing our intellectual property, including patents and other rights.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including QGOV (Qualcomm Government Technologies), our cloud AI inference processing initiative and other technology and service initiatives.

Further information regarding our business and operating segments is provided in "Part I, Item 1. Business" of this Annual Report.

Seasonality. Many of our products and much of our intellectual property are incorporated into consumer wireless devices, which are subject to seasonality and other fluctuations in demand. Our revenues have historically fluctuated based on consumer demand for devices, as well as on the timing of customer/licensee device launches and/or innovation cycles (such as the transition to the next generation of wireless technologies). This has resulted in fluctuations in QCT revenues in advance of and during device launches incorporating our products and in QTL revenues when licensees' sales occur. These trends may or may not continue in the future. Further, the trends for QTL have been, and may in the future be, impacted by disputes and/or resolutions with licensees and/or governmental investigations or proceedings.

Results of Operations

Revenues (in millions)

	2021	2020	2021 vs. 2020 Change
Equipment and services	$ 26,741	$ 16,298	$ 10,443
Licensing	6,825	7,233	(408)
	$ 33,566	$ 23,531	$ 10,035

2021 vs. 2020

The increase in revenues in fiscal 2021 was primarily due to:

- + $10.4 billion in higher equipment and services revenues from our QCT segment
- + $1.3 billion in higher licensing revenues from our QTL segment
- - $1.8 billion in licensing revenues from Huawei recorded in the fourth quarter of fiscal 2020 resulting from amounts due under the settlement agreement signed in July 2020 and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent license agreement signed in July 2020 (which were not allocated to our segment results)

Costs and Expenses (in millions, except percentages)

	2021	2020	2021 vs. 2020 Change
Cost of revenues	$ 14,262	$ 9,255	$ 5,007
Gross margin	58 %	61 %	

2021 vs. 2020

Gross margin percentage decreased in fiscal 2021 primarily due to:

- - decrease in licensing revenues from Huawei recorded in fiscal 2020 resulting from amounts due under the settlement agreement and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent licensing agreement
- - decrease in higher margin QTL licensing revenues in proportion to QCT revenues
- + increase in QCT gross margin

	2021	2020	2021 vs. 2020 Change
Research and development	$ 7,176	$ 5,975	$ 1,201
% of revenues	21 %	25 %	

2021 vs. 2020

The increase in research and development expenses in fiscal 2021 was due to:

- + $793 million increase driven by higher costs related to the development of wireless and integrated circuit technologies (including 5G and application processor technologies), a portion of which was attributable to higher employee cash incentive program costs
- + $362 million increase in share-based compensation expense
- + $46 million increase in expenses driven by revaluation of our deferred compensation obligation on improved stock market performance (which resulted in a corresponding increase in net gains on deferred compensation plan assets within investment and other income, net due to the revaluation of the related assets)

	2021		2020		2021 vs. 2020 Change	
Selling, general and administrative	$	2,339	$	2,074	$	265
% of revenues		7 %		9 %		

2021 vs. 2020

The increase in selling, general and administrative expenses in fiscal 2021 was primarily due to:

- \+ $164 million increase in employee-related expenses, a portion of which was attributable to higher employee cash incentive program costs
- \+ $83 million increase in share-based compensation expense
- \+ $38 million increase in expenses driven by revaluation of our deferred compensation obligation on improved stock market performance (which resulted in a corresponding increase in net gains on deferred compensation plan assets within investment and other income, net due to the revaluation of the related assets)
- \+ $32 million increase in sales and marketing expenses
- \- $73 million decrease in litigation costs

	2021		2020		2021 vs. 2020 Change	
Other (income) expense	$	—	$	(28)	$	28

2020

Other income in fiscal 2020 consisted of $28 million in gains related to a favorable legal settlement.

Interest Expense and Investment and Other Income, Net (in millions)

	2021		2020		2021 vs. 2020 Change	
Interest expense	$	559	$	602	$	(43)
Investment and other income, net						
Interest and dividend income	$	83	$	156	$	(73)
Net gains on marketable securities		427		198		229
Net gains on other investments		470		108		362
Net gains on deferred compensation plan assets		130		47		83
Impairment losses on other investments		(33)		(405)		372
Net (losses) gains on derivative instruments		(14)		8		(22)
Equity in net earnings (losses) of investees		13		(21)		34
Net losses on foreign currency transactions		(32)		(25)		(7)
	$	1,044	$	66	$	978

Net gains on marketable securities for fiscal 2021 was primarily driven by the initial public offerings of certain QSI equity investments. Net gains on other investments for fiscal 2021 was primarily driven by realized gains resulting from the sale of certain of our QSI non-marketable investments.

The impairment losses in fiscal 2020 were due in part to the impact COVID-19 had on certain of our investees. A significant portion of the impairment losses related to our investment in OneWeb who filed for bankruptcy in the second quarter of fiscal 2020.

Income Tax Expense (in millions, except percentages)

The following table summarizes the primary factors that caused our annual tax provision to differ from the expected income tax provision at the U.S. federal statutory rate. Substantially all of our income is in the U.S., of which a significant portion qualifies for preferential treatment as FDII (foreign-derived intangible income) at a 13% effective tax rate.

	2021	2020
Expected income tax provision at federal statutory tax rate	$ 2,158	$ 1,201
Benefit from FDII deduction	(550)	(381)
Excess tax benefit associated with share-based awards	(265)	(83)
Benefit related to the research and development tax credit	(195)	(125)
Other	83	(91)
Income tax expense	$ 1,231	$ 521
Effective tax rate	12 %	9 %

In the first quarter of fiscal 2021, the United States Treasury Department issued final regulations on the foreign tax credit, which generally are applicable beginning in fiscal 2021, with certain provisions retroactive to fiscal 2019. As a result of these regulations, our fiscal 2021 effective tax rate increased by approximately 1%. The retroactive impact resulting from these new regulations, which was related to fiscal 2019 and fiscal 2020 and recorded in fiscal 2021, was not significant.

Unrecognized tax benefits were $2.1 billion and $1.9 billion at September 26, 2021 and September 27, 2020, respectively. The increase in unrecognized tax benefits in fiscal 2021 was primarily due to expected refunds of Korean withholding taxes previously paid as licensees in Korea continue to withhold taxes on payments due under their licensing agreements at a rate higher than we believe is owed (which had an insignificant impact to our income tax provision). If successful, the refund will result in a corresponding reduction in U.S. foreign tax credits. We are subject to income taxes in the U.S. and numerous foreign jurisdictions and are currently under examination by various tax authorities worldwide, primarily related to transfer pricing. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. As of September 26, 2021, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

The current U.S. presidential administration and Congress have proposed to increase U.S. tax rates and/or eliminate or reduce the FDII deduction. Substantially all of our income is taxable in the U.S., of which a significant portion qualifies for preferential treatment as FDII. If such proposals are enacted into law, our provision for income taxes, results of operations and cash flows would be adversely affected (potentially materially) beginning as early as the first quarter of fiscal 2022.

Segment Results

The following should be read in conjunction with the fiscal 2021 and 2020 results of operations for each reportable segment included in this Annual Report in “Notes to Consolidated Financial Statements, Note 8. Segment Information.”

QCT Segment (in millions, except percentages)

	2021	2020	2021 vs. 2020 Change
Revenues			
Handsets (1)	$ 16,830	$ 10,461	$ 6,369
RFFE (2)	4,158	2,362	1,796
Automotive (3)	975	644	331
IoT (internet of things) (4)	5,056	3,026	2,030
Total revenues	$ 27,019	$ 16,493	$ 10,526
EBT (5)	$ 7,763	$ 2,763	$ 5,000
EBT as a % of revenues	29 %	17 %	12 points

(1) Includes revenues from products sold for use in mobile handsets, excluding RFFE (radio frequency front-end) components.

(2) Includes all revenues from sales of 4G, 5G sub-6 and 5G millimeter wave RFFE products (a substantial portion of which are sold for use in mobile handsets) and excludes radio frequency transceiver components.

(3) Includes revenues from products sold for use in automobiles, including telematics, connectivity and digital cockpit.

(4) Primarily includes products sold for use in the following industries and applications: consumer (including computing, voice and music and XR), industrial (including handhelds, retail, transportation and logistics and utilities) and edge networking (including mobile broadband and wireless access points).

(5) Earnings (loss) before income taxes.

Substantially all of QCT's revenues consist of equipment and services revenues, which were $26.6 billion and $16.1 billion in fiscal 2021 and 2020, respectively. QCT handsets, automotive and IoT revenues mostly relate to sales of our stand-alone Mobile Data Modems, Snapdragon platforms (which include processors and modems), radio frequency transceiver, power management and wireless connectivity integrated chipsets.

QCT results for fiscal 2021 compared to the prior year reflect a recovery from the negative impacts of COVID-19.

2021 vs. 2020

The increase in QCT revenues in fiscal 2021 was primarily due to:

- + higher handset revenues, primarily driven by $3.6 billion in higher chipset shipments and $2.6 billion in higher revenue per chipset, both of which were primarily due to an increase in demand for 5G products from Apple and other major OEMs
- + higher RFFE product revenues, driven by an increase in demand for 4G/5G products from Apple and other major OEMs
- + higher automotive revenues, primarily driven by an increase in demand for telematics and digital cockpit products
- + higher IoT revenues, driven by $1.7 billion in higher shipments across consumer, edge networking and industrial products and $378 million in revenue per unit due to an increase in demand for 5G

QCT EBT as a percentage of revenues increased in fiscal 2021 due to:

- + higher revenues
- + higher gross margin percentage, primarily driven by favorable mix and higher average selling prices, partially offset by higher average unit costs, all of which were due to an increase in demand for 5G products
- - higher operating expenses, primarily driven by higher research and development expenses

QTL Segment (in millions, except percentages)

	2021	2020	2021 vs. 2020 Change
Licensing revenues	$ 6,320	$ 5,028	$ 1,292
EBT	4,627	3,442	1,185
EBT as a % of revenues	73 %	68 %	5 points

In July 2020, we entered into a settlement agreement with Huawei to resolve our prior dispute related to the license agreement that expired on December 31, 2019. We also entered into a new long-term, global patent license agreement that applies to sales of certain wireless products by Huawei beginning on January 1, 2020. We did not record any QTL revenues for the first nine months of fiscal 2020 for royalties due on the sales of Huawei's consumer wireless products. Revenues of $1.8 billion recorded in the fourth quarter of fiscal 2020 resulting from the settlement agreement with Huawei and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent license agreement with Huawei were not allocated to our segment results.

2021 vs. 2020

The increase in QTL licensing revenues in fiscal 2021 was due to:

- + $1.1 billion in estimated sales of 3G/4G/5G-based multimode products, primarily due to a recovery from the negative impacts of COVID-19 and as a result of not recognizing any QTL revenues for the first nine months of fiscal 2020 for royalties due on the sales of Huawei's consumer wireless products
- + $273 million in higher estimated revenues per unit, primarily due to favorable OEM mix
- - $103 million in lower royalty revenues recognized related to devices sold in prior periods

QTL EBT as a percentage of revenues increased in fiscal 2021 due to:

- + higher revenues
- - higher operating expenses, primarily driven by higher research and development expenses

QSI Segment (in millions)

	2021	2020	2021 vs. 2020 Change
Equipment and services revenues	$ 45	$ 36	$ 9
EBT	916	(11)	927

2021 vs. 2020

The increase in QSI EBT in fiscal 2021 was due to:

- \+ $575 million increase in net gains on investments, primarily driven by gains resulting from the initial public offerings of certain of our equity investments
- \+ $313 million decrease in impairment losses on other investments, of which a significant portion in fiscal 2020 related to our investment in OneWeb
- \+ $38 million increase in equity in net earnings of investees

Looking Forward

In the coming years, we expect new consumer demand for 3G/4G/5G multimode and 5G products and services to continue to ramp around the world as we continue to transition from 3G/4G multimode and 4G products and services. We believe that 5G will continue to drive adoption of certain technologies that are already commonly used in smartphones by industries and applications beyond mobile handsets, such as automotive and IoT. We believe it is important that we remain a leader in 5G technology development, standardization, intellectual property creation and licensing, and a leading developer and supplier of 5G integrated circuit products in order to sustain and grow our business long term.

As we look forward to the next several quarters, our business may be impacted by the following key items:

- We expect QCT revenues to continue to be favorably impacted compared to fiscal 2021 due to increased demand across handset, RFFE, automotive and IoT revenue streams.
- While the semiconductor industry continues to experience certain capacity constraints, we have entered into several, and we expect to enter into additional, multi-year capacity purchase commitments with certain suppliers of our integrated circuit products in an effort to secure commitments for future supply, which we expect will allow us to continue to realize benefits from increased demand for integrated circuit products, particularly from certain Chinese OEMs as they continue to position to gain device share.
- We expect commercial 5G network deployments and device launches will continue.
- We expect our research and development costs will increase compared to fiscal 2021, primarily due to increased investment towards advancements in 5G and application processor technologies and certain other long-term initiatives, as well as an increase in share-based compensation expense.
- We expect continued intense competition, particularly in China.
- Current U.S./China trade relations and/or national security protection policies may negatively impact our business, growth prospects and results of operations. See “Risk Factors” in this Annual Report, including the Risk Factor entitled “*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.”*
- We currently do not expect a significant impact on our results of operations in the future due to COVID-19. The degree to which the COVID-19 pandemic impacts our business, financial condition and results of operations will depend on future developments, which are highly uncertain. See “Risk Factors” in this Annual Report, specifically the Risk Factor titled “*The coronavirus (COVID-19) pandemic had an adverse effect on our business and results of operations, and may continue to impact us in the future.”*

In addition to the foregoing business and market-based matters, we continue to devote resources to working with and educating participants in the wireless industry and governments as to the benefits of our licensing program and our extensive technology investments in promoting a highly competitive and innovative wireless industry. However, we expect that certain companies may be dissatisfied with the need to pay reasonable royalties for the use of our technologies and not welcome the success of our licensing program in enabling new, highly cost-effective competitors to their products. Accordingly, such companies, and/or governments or regulators, may continue to challenge our business model in various forums throughout the world.

Further discussion of risks related to our business is provided in “Part I, Item 1A. Risk Factors” included in this Annual Report.

Liquidity and Capital Resources

Our principal sources of liquidity are our existing cash, cash equivalents and marketable securities, cash generated from operations and cash provided by our debt programs. The following table presents selected financial information related to our liquidity as of and for the years ended September 26, 2021 and September 27, 2020 (in millions):

	September 26, 2021	September 27, 2020	Change
Cash, cash equivalents and marketable securities	$ 12,414	$ 11,249	$ 1,165
Accounts receivable, net	3,579	4,003	(424)
Inventories	3,228	2,598	630
Short-term debt	2,044	500	1,544
Long-term debt	13,701	15,226	(1,525)
Noncurrent income taxes payable	1,713	1,872	(159)

	2021	2020	Change
Net cash provided by operating activities	$ 10,536	$ 5,814	$ 4,722
Net cash used by investing activities	(3,356)	(5,263)	1,907
Net cash used by financing activities	(6,798)	(5,707)	(1,091)

Cash, cash equivalents and marketable securities. The net increase in cash, cash equivalents and marketable securities was primarily due to net cash provided by operating activities (which includes $1.6 billion of cash outflows related to certain advance payments made to suppliers of our integrated circuit products under multi-year capacity commitments), $430 million increase in marketable securities resulting from initial public offerings of certain non-marketable equity investments, $347 million in proceeds from the issuance of common stock (primarily under our Employee Stock Purchase Plan) and $320 million in proceeds from other investments, partially offset by $3.4 billion in payments to repurchase shares of our common stock, $3.0 billion in cash dividends paid, $1.9 billion in capital expenditures, $1.4 billion in cash paid for acquisitions and other investments (primarily related to the acquisition of NUVIA) and $737 million in payments of tax withholdings related to the vesting of share-based awards.

Accounts receivable, net. The decrease in accounts receivable was primarily due to payments received under the previously disclosed settlement agreement with Huawei. The decrease in accounts receivable was also partially attributable to the timing of collection of payments from certain of our QTL licensees, partially offset by an increase in QCT accounts receivable resulting from an increase in QCT revenues in the fourth quarter of fiscal 2021 as compared to the fourth quarter of fiscal 2020.

Inventories. The increase in inventories was primarily driven by the increase in demand for 5G products.

Debt. At September 26, 2021, we had $15.5 billion of principal floating- and fixed-rate notes outstanding, $1.5 billion of which matures in May 2022. The remaining debt has maturity dates in 2023 through 2050.

We have an unsecured commercial paper program, which provides for the issuance of up to $4.5 billion of commercial paper. Net proceeds from this program are used for general corporate purposes. At September 26, 2021, we had $500 million of commercial paper outstanding.

On December 8, 2020, we entered into a Revolving Credit Facility replacing our prior Amended and Restated Revolving Credit Facility. There were no outstanding borrowings under the Amended and Restated Revolving Credit Facility at the time of termination. The Revolving Credit Facility provides for unsecured revolving facility loans, swing line loans and letters of credit in an aggregate amount of up to $4.5 billion, which expires on December 8, 2025. At September 26, 2021, no amounts were outstanding under the Revolving Credit Facility.

We expect to issue new debt in the future. The amount and timing of any such new debt will depend on a number of factors, including but not limited to maturities of our existing debt, acquisitions and strategic investments, favorable and/or acceptable interest rates and changes in corporate income tax law. Additional information regarding our outstanding debt at September 26, 2021 is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 6. Debt.”

Income Taxes. At September 26, 2021, we estimated remaining future payments of $1.9 billion for a one-time U.S. repatriation tax accrued in fiscal 2018, after application of certain tax credits, which is payable in installments over the next five years. At September 26, 2021, other current liabilities included $196 million for the next installment due in January 2022. Additional information regarding our income taxes is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 3. Income Taxes.”

Acquisitions. In October 2021, we and SSW Partners entered into a definitive agreement to acquire Veoneer for total estimated cash consideration of approximately $4.5 billion, substantially all of which will be funded by Qualcomm, and we paid a $110 million termination fee to Magna International Inc., on behalf of Veoneer. Further, we have agreed to provide a loan facility (or guarantee amounts provided by a third party) that provides financing to Veoneer of up to $480 million. The acquisition is expected to close in 2022. Information related to this definitive agreement to acquire Veoneer, including additional information related to certain contingent financing obligations, is included in this Annual Report in "Notes to Consolidated Financial Statements, Note 12. Subsequent Events." We expect to continue making strategic investments and acquisitions, the amounts of which could vary significantly, to open new opportunities for our technologies, obtain development resources, grow our patent portfolio or pursue new businesses.

Capital Return Program. The following table summarizes stock repurchases, before commissions, and dividends paid during fiscal 2021 and 2020 (in millions, except per-share amounts):

	Stock Repurchase Program			Dividends		Total
	Shares	**Average Price Paid Per Share**	**Amount**	**Per Share**	**Amount**	**Amount**
2021	24	$ 141.17	$ 3,366	$ 2.66	$ 3,008	$ 6,374
2020	31	79.32	2,450	2.54	2,882	5,332

In fiscal 2018, we announced a stock repurchase program authorizing us to repurchase up to $30.0 billion of our common stock. On October 12, 2021, we announced a new $10.0 billion stock repurchase authorization, which is in addition to the remaining repurchase authority of $0.9 billion under the aforementioned program. The stock repurchase programs have no expiration date. Since September 26, 2021, we repurchased and retired 5.4 million shares of common stock for $703 million. Our stock repurchase programs are subject to periodic evaluations to determine when and if repurchases are in the best interests of our stockholders, and we may accelerate, suspend, delay or discontinue repurchases at any time.

On October 13, 2021, we announced a cash dividend of $0.68 per share on our common stock, payable on December 16, 2021 to stockholders of record as of the close of business on December 2, 2021. We intend to continue to use cash dividends as a means of returning capital to stockholders, subject to capital availability and our view that cash dividends are in the best interests of our stockholders, among other factors.

Additional Capital Requirements. We believe our cash, cash equivalents and marketable securities, our expected cash flow generated from operations and our expected financing activities will satisfy our working and other capital requirements for at least the next 12 months based on our current business plans. Recent and expected working and other capital requirements, in addition to the above matters, also include the items described below:

- Our purchase obligations at September 26, 2021, which primarily relate to purchase commitments with certain suppliers of our integrated circuit products, including those under multi-year capacity commitments, and certain other expenses, some of which relate to research and development activities and capital expenditures, totaled $23.5 billion, of which, $12.9 billion is expected to be paid in the next 12 months. We expect an increase in operating cash outflows as compared to fiscal 2021 as we make payments under the multi-year capacity commitments and as we enter into additional agreements with certain suppliers of our integrated circuit products.
- Our research and development expenditures were $7.2 billion in fiscal 2021 and $6.0 billion in fiscal 2020, and we expect to increase our investment in research and development in fiscal 2022, including in advancements in existing and new technologies and products.
- Cash outflows for capital expenditures were $1.9 billion in fiscal 2021 and $1.4 billion in fiscal 2020. We expect capital expenditures to increase in fiscal 2022 to support the increase in our manufacturing and production capacity needs.
- Amounts related to future lease payments for operating lease obligations at September 26, 2021 totaled $677 million, with $141 million expected to be paid within the next 12 months.
- At September 26, 2021, $1.5 billion was accrued related to two fines imposed by the EC (based on the exchange rate at September 26, 2021, including related foreign currency gains and accrued interest). We have provided financial guarantees in lieu of cash payment to satisfy the obligations while we appeal the EU's decisions.

Further, regulatory authorities in certain jurisdictions have investigated our business practices and instituted proceedings against us and they or other regulatory authorities may do so in the future. Additionally, certain of our direct and indirect customers and licensees have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, financial condition and cash flows. See “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies” and “Part I, Item 1A. Risk Factors” in this Annual Report.

Critical Accounting Estimates

The preparation of our consolidated financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and disclosure of contingent assets and liabilities. We base our estimates on historical and anticipated results and trends and on various other assumptions that we believe are reasonable under the circumstances, including assumptions as to future events. By their nature, estimates are subject to an inherent degree of uncertainty. Although we believe that our estimates and the assumptions supporting our assessments are reasonable, actual results that differ from our estimates could be material to our consolidated financial statements.

Refer to "Note 1. Significant Accounting Policies" and "Note 2. Composition of Certain Financial Statement Items" included in this Annual Report in "Notes to Consolidated Financial Statements" for further information on our critical accounting estimates and policies, which are as follows. In addition, if the impact of changes in our critical accounting estimates are material or considered necessary to understand our results of operations for the periods presented, then such information is disclosed within this Annual Report in "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Results of Operations."

Revenue Recognition. We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. We estimate and recognize sales-based royalties on such licensed products in the period in which the licensees' sales occur, which is based largely on preliminary royalty estimates provided by our licensees. Actual amounts for sales-based royalties have been materially consistent with such estimates, and no significant reversals of revenues have been required as a result of adjustments to prior period royalty estimates. Significant evaluation and judgment were required in determining the appropriate accounting for the settlement agreement and the global patent license agreement with Huawei, which were signed in the fourth quarter of fiscal 2020. We considered, among other items, Huawei's commitment to perform under such agreements (including Huawei's intent and ability to pay amounts due), Huawei's performance as of the date of assessment under the agreements (including timely payments made), Huawei's then-current and projected financial condition (including the impact of enacted national security protection policies by the U.S. government on Huawei's business) and certain contractual protections that we obtained under these agreements. In the fourth quarter of fiscal 2021, Huawei paid the final installment under the settlement agreement, and there were no changes to our previous judgments, estimates and initial evaluation related to the revenues recorded in fiscal 2020 under the settlement agreement.

Impairment of Non-marketable Equity Investments. We monitor our investments for events or circumstances that could indicate impairment, including those that result from observable price adjustments. In fiscal 2021, we recorded impairment losses on other investments (which primarily related to our non-marketable equity investments) of $33 million, a decrease of $372 million compared to fiscal 2020. Significant evaluation and judgments were required in determining if the negative effects of COVID-19 indicated that such investments were impaired, and if so, the extent of such impairment. This included, among other items: (i) assessing the business impacts that COVID-19 had on our investees, including taking into consideration the investee's industry and geographic location and the impact to its customers, suppliers and employees, as applicable, (ii) evaluating the investees' ability to respond to the impacts of COVID-19, including any significant deterioration in the investee's financial condition and cash flows, as well as assessing liquidity and/or going concern risks and (iii) considering any appreciation in fair value that has not been recognized in the carrying values of such investments. Based on this evaluation, certain of our investments were impaired and written down to their estimated fair values in fiscal 2020 (a significant portion of which related to the full impairment of our investment in OneWeb, who filed for bankruptcy in the second quarter of fiscal 2020). For a significant portion of the impairment losses recorded in 2020, the estimated fair values resulted in a full write-off of the carrying value. In fiscal 2021, there were no significant impairment losses or adjustments to our previous judgments and estimates recorded.

Inventories. We measure inventory at the lower of cost or net realizable value considering judgments related to future demand and market conditions, such as the impact of certain capacity constraints experienced across the semiconductor industry in fiscal 2021 and the impacts of COVID-19 in fiscal 2020. For fiscal 2021 and 2020, the overall net effect on our operating results from changes in this estimate were not material.

Impairment of Goodwill and Long-Lived Assets. We monitor our goodwill and long-lived assets for the existence of impairment indicators and apply judgments in the valuation methods and underlying assumptions utilized in such assessments. During fiscal 2021 and fiscal 2020, impairment charges for long-lived assets were negligible. Additionally, the estimated fair values of our QCT and QTL reporting units, based on our qualitative assessment, were substantially in excess of their respective carrying values at September 26, 2021.

Legal and Regulatory Proceedings. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. We face difficulties in evaluating or estimating likely outcomes or the amount of possible loss in certain legal and regulatory proceedings.

Income Taxes. We make significant judgments and estimates in determining our provision for income taxes, including our assessment of our income tax positions given the uncertainties involved in the interpretation and application of complex tax laws and regulations in various taxing jurisdictions.

Recent Accounting Pronouncements

Information regarding recent accounting pronouncements and the impact of those pronouncements, if any, on our consolidated financial statements is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies."

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Marketable Securities

We have made investments in marketable equity securities of companies of varying size, style, industry and geography and changes in investment allocations may affect the price volatility of our investments.

Equity Price Risk. At September 26, 2021, the recorded value of our marketable equity securities was $682 million. A 10% decrease in the market price of our marketable equity securities at September 26, 2021 would have caused a decrease in the carrying amounts of these securities of $68 million. A 10% decrease in the market price of our marketable equity securities at September 27, 2020 would have caused a decrease in the carrying amounts of these securities of $35 million.

Interest Rate Risk. We invest a portion of our cash in a number of diversified fixed- and floating-rate securities consisting of cash equivalents, marketable debt securities and time and demand deposits that are subject to interest rate risk. At September 26, 2021 and September 27, 2020, a hypothetical increase in interest rates of 100 basis points across the entire yield curve on our holdings would have resulted in a decrease of $50 million and $32 million, respectively, in the fair value of our holdings.

Other Investments

Equity Price Risk. We hold investments in non-marketable equity instruments in privately held companies that may be impacted by equity price risks. Volatility in the equity markets could negatively affect our investees' ability to raise additional capital as well as our ability to realize value from our investments through initial public offerings, mergers or private sales. Consequently, we could incur impairment losses or realized losses on all or part of the values of our non-marketable equity investments. At September 26, 2021, the aggregate carrying value of our non-marketable equity investments was included in other assets and was $1.3 billion.

Debt and Interest Rate Swap Agreements

Interest Rate Risk. As substantially all of our debt is comprised of unsecured fixed-rate notes, we are not subject to significant interest rate risk. At September 26, 2021, we had an aggregate principal amount of $500 million in unsecured floating-rate notes due January 30, 2023. The interest rates on our floating-rate notes are based on LIBOR. At September 26, 2021 and September 27, 2020, a hypothetical increase in LIBOR-based interest rates of 100 basis points would cause a negligible increase to interest expense on an annualized basis as it relates to our floating-rate notes. At September 26, 2021, we also had $500 million in commercial paper outstanding, for which our exposure to interest rate risk was negligible based on the original maturities of approximately three months or less.

From time to time, we manage our exposure to certain interest rate risks related to our long-term debt through the use of interest rate swaps. During fiscal 2021, we entered into forward-starting interest rate swaps with an aggregate notional amount of $2.6 billion to hedge the variability of forecasted interest payments on anticipated debt issuances through 2025. The interest rates on our interest rate swaps are based on LIBOR. At September 26, 2021, a hypothetical decrease in interest rates of 100 basis points would cause an increase of $23 million to interest expense on an annualized basis resulting from the changes in fair values of the interest rate swaps related to our anticipated debt issuances through 2025.

Foreign Exchange Risk

We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative and non-derivative financial instruments, including foreign currency forward and option contracts with financial counterparties and net investment hedges. We utilize such derivative financial instruments for hedging or risk management purposes rather than for speculative purposes. Counterparties to these derivative contracts are all major banking institutions. In the event of the financial insolvency or distress of a counterparty to our derivative financial instruments, we may be unable to settle transactions if the counterparty does not provide us with sufficient collateral to secure its net settlement obligations to us, which could have a negative impact on our results.

Foreign Currency Options. At September 26, 2021, our net liability related to foreign currency options designated as hedges of foreign currency risk on royalties earned from certain licensees was negligible. At September 26, 2021 and September 27, 2020, if our forecasted royalty revenues for currencies in which we hedge were to decline by 10% and foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would not incur a loss as our hedge positions would continue to be fully effective.

Foreign Currency Forwards. At September 26, 2021, our net asset related to foreign currency forward contracts designated as hedges of foreign currency risk on certain operating expenditure transactions was $39 million. If our forecasted operating expenditures for currencies in which we hedge were to decline by 10% and foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would incur a negligible loss. Based on forecasts at September 27, 2020, assuming the same hypothetical market conditions, we would not have incurred a loss.

At September 26, 2021, our net asset related to foreign currency forward contracts not designated as hedging instruments used to manage foreign currency risk on certain receivables and payables was negligible. At September 26, 2021 and September 27, 2020, if the foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would not incur a loss as the change in the fair value of the foreign currency option and forward contracts would be offset by the change in fair value of the related receivables and/or payables being economically hedged.

Net Investment Hedges. At September 26, 2021, we have designated $1.5 billion of foreign currency-denominated liabilities, excluding accrued interest, as hedges of our net investment in certain foreign subsidiaries. If foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, there would be an increase of $145 million in the accumulated other comprehensive loss attributable to the cumulative foreign currency translation adjustment at September 26, 2021 related to our net investment hedges. The change in value recorded in cumulative foreign currency translation adjustment would be expected to offset a corresponding foreign currency translation gain or loss from our investment in foreign subsidiaries.

Functional Currency. Financial assets and liabilities held by consolidated subsidiaries that are not denominated in the functional currency of those entities are subject to the effects of currency fluctuations and may affect reported earnings. As a global company, we face exposure to adverse movements in foreign currency exchange rates. We may hedge currency exposures associated with certain assets and liabilities denominated in nonfunctional currencies and certain anticipated nonfunctional currency transactions. As a result, we could experience unanticipated gains or losses on anticipated foreign currency cash flows, as well as economic loss with respect to the recoverability of investments. While we may hedge certain transactions with non-U.S. customers, declines in currency values in certain regions may, if not reversed, adversely affect future product sales because our products may become more expensive to purchase in the countries of the affected currencies.

Our analysis methods used to assess and mitigate the risks discussed above should not be considered projections of future risks. Additional information regarding the financial instruments mentioned above is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies,” “Notes to Consolidated Financial Statements, Note 2. Composition of Certain Financial Statement Items,” “Notes to Consolidated Financial Statements, Note 6. Debt,” “Notes to Consolidated Financial Statements, Note 10. Fair Value Measurements” and “Notes to Consolidated Financial Statements, Note 11. Marketable Securities.”

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements at September 26, 2021 and September 27, 2020 and for each of the three years in the period ended September 26, 2021, and the Report of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm, are included in this Annual Report on pages F-1 through F-32.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such terms are defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the Exchange Act). Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Annual Report.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under this framework, our management concluded that our internal control over financial reporting was effective as of September 26, 2021.

PricewaterhouseCoopers LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this Annual Report, has also audited the effectiveness of our internal control over financial reporting as of September 26, 2021, as stated in its report which appears on pages F-1 through F-2 in this Annual Report.

Inherent Limitations over Internal Controls

Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that:

i. pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;

ii. provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

iii. provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the consolidated financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations, including the possibility of human error and circumvention by collusion or overriding of controls. Accordingly, even an effective internal control system may not prevent or detect material misstatements on a timely basis. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the fourth quarter of fiscal 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item regarding directors is incorporated by reference to our 2022 Proxy Statement to be filed with the SEC in connection with our 2022 Annual Meeting of Stockholders (2022 Proxy Statement) in "Proposal 1: Election of Directors" under the subheading "Nominees for Election." Certain information required by this item regarding executive officers is set forth in Item 1 of Part I of this Report under the heading "Information about our Executive Officers." The information required by this item regarding corporate governance is incorporated by reference to our 2022 Proxy Statement in the section titled "Corporate Governance" under the headings "Code of Ethics and Corporate Governance Principles and Practices" and "Board Meetings, Committees and Attendance" and in the section titled "Stock Ownership of Certain Beneficial Owners and Management" under the heading "Delinquent Section 16(a) Reports."

Item 11. Executive Compensation

The information required by this item is incorporated by reference to our 2022 Proxy Statement in the sections titled "Executive Compensation and Related Information," "Compensation Discussion and Analysis," "HR and Compensation Committee Report," "Compensation Tables and Narrative Disclosures" and "Director Compensation," and in the section titled "Stock Ownership of Certain Beneficial Owners and Management" under the subheading "Compensation Committee Interlocks and Insider Participation."

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference to our 2022 Proxy Statement in the section titled "Stock Ownership of Certain Beneficial Owners and Management" including under the subheading "Equity Compensation Plan Information."

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to our 2022 Proxy Statement in the section titled "Certain Relationships and Related-Person Transactions," and in the section titled "Corporate Governance" under the subheadings "Director Independence" and "Board Meetings, Committees and Attendance."

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to our 2022 Proxy Statement in "Proposal 2: Ratification of Selection of Independent Public Accountants."

PART IV

Item 15. Exhibits and Financial Statement Schedules

The following documents are filed as part of this report:

(a) Financial Statements:

Financial statement schedules other than those listed above have been omitted because they are either not required, not applicable or the information is otherwise included in the notes to the consolidated financial statements.

(b) Exhibits

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
2.1	Agreement and Plan of Merger, dated as of January 12, 2021, among Qualcomm Technologies, Inc., Nile Acquisition Corporation and NuVia, Inc. (1)	8-K	1/13/2021	2.1	
2.2	Agreement and Plan of Merger, dated as of October 4, 2021, by and among QUALCOMM Incorporated, SSW HoldCo LP, SSW Merger Sub Corp and Veoneer, Inc. (1)	8-K	10/4/2021	2.1	
3.1	Amended and Restated Certificate of Incorporation.	8-K	4/20/2018	3.1	
3.2	Amended and Restated Bylaws.	8-K	7/23/2021	3.2	
4.1	Indenture, dated May 20, 2015, between the Company and U.S. Bank National Association, as trustee.	8-K	5/21/2015	4.1	
4.2	Officers' Certificate, dated May 20, 2015, for the Floating Rate Notes due 2018, the Floating Rate Notes due 2020, the 1.400% Notes due 2018, the 2.250% Notes due 2020, the 3.000% Notes due 2022, the 3.450% Notes due 2025, the 4.650% Notes due 2035 and the 4.800% Notes due 2045.	8-K	5/21/2015	4.2	
4.3	Form of 3.000% Notes due 2022.	8-K	5/21/2015	4.7	
4.4	Form of 3.450% Notes due 2025.	8-K	5/21/2015	4.8	
4.5	Form of 4.650% Notes due 2035.	8-K	5/21/2015	4.9	
4.6	Form of 4.800% Notes due 2045.	8-K	5/21/2015	4.10	
4.7	Officers' Certificate, dated May 26, 2017, for the Floating Rate Notes due 2019, the Floating Rate Notes due 2020, the Floating Rate Notes due 2023, the 1.850% Notes due 2019, the 2.100% Notes due 2020, the 2.600% Notes due 2023, the 2.900% Notes due 2024, the 3.250% Notes due 2027 and the 4.300% Notes due 2047.	8-K	5/31/2017	4.2	
4.8	Form of Floating Rate Notes due 2023.	8-K	5/31/2017	4.5	
4.9	Form of 2.600% Notes due 2023.	8-K	5/31/2017	4.8	
4.10	Form of 2.900% Notes due 2024.	8-K	5/31/2017	4.9	
4.11	Form of 3.250% Notes due 2027.	8-K	5/31/2017	4.10	
4.12	Form of 4.300% Notes due 2047.	8-K	5/31/2017	4.11	
4.13	Officers' Certificate, dated May 8, 2020, for the 2.150% Notes due 2030 and the 3.250% Notes due 2050.	8-K	5/11/2020	4.2	
4.14	Form of 2.150% Notes due 2030.	8-K	5/11/2020	4.3	
4.15	Form of 3.250% Notes due 2050.	8-K	5/11/2020	4.4	
4.16	Officers' Certificate, dated August 14, 2020, for the 1.300% Notes due 2028 and the 1.650% Notes due 2032.	8-K	8/18/2020	4.2	
4.17	Form of 1.300% Rule 144A Global Notes due 2028.	8-K	8/18/2020	4.3	
4.18	Form of 1.650% Rule 144A Global Notes due 2032.	8-K	8/18/2020	4.5	
4.19	Registration Rights Agreement, dated as of August 14, 2020.	8-K	8/18/2020	4.7	
4.20	Officers' Certificate, dated January 6, 2021, for the 1.300% Notes due 2028 and the 1.650% Notes due 2032.	10-Q	02/3/2021	4.23	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
4.21	Form of 1.300% Notes due 2028.	10-Q	02/3/2021	4.24	
4.22	Form of 1.650% Notes due 2032.	10-Q	02/3/2021	4.25	
4.23	Description of registrant's securities.	10-K	11/6/2019	4.15	
10.1	Form of Indemnity Agreement between the Company and its directors and officers. (2)	10-K	11/4/2015	10.1	
10.2	Amended and Restated 2016 Long-Term Incentive Plan. (2)	10-Q	4/29/2020	10.7	
10.3	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in the United States (2016 Form). (2)	10-Q	4/20/2016	10.32	
10.4	Forms of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for Non-Employee Directors in Hong Kong. (2)	10-Q	4/28/21	10.4	
10.5	Credit Agreement among QUALCOMM Incorporated, the lenders party thereto, the letter of credit issuers party thereto and Bank of America, N.A., as administrative agent, swing line lender and a letter of credit issuer, dated as of December 8, 2020.	8-K	12/10/2020	10.1	
10.6	Qualcomm Incorporated Non-Executive Officer Change in Control Severance Plan (as amended and restated).	10-Q	7/28/2021	10.7	
10.7	Forms of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for Non-Employee Directors in Singapore. (2)	10-Q	4/28/21	10.8	
10.8	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement (2018 Form). (2)	10-Q	4/25/2018	10.60	
10.9	Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan, as amended. (2)	10-Q	4/25/2018	10.62	
10.10	Qualcomm Incorporated Executive Officer Change in Control Severance Plan (as amended and restated). (2)	10-Q	7/28/2021	10.11	
10.11	Qualcomm Incorporated Executive Officer Severance Plan (as amended and restated). (2)	10-Q	7/28/2021	10.12	
10.12	Qualcomm Incorporated 2016 Long-Term Incentive Plan CEO Performance Stock Option Grant Notice and CEO Performance Stock Option Agreement. (2)	10-K	11/7/2018	10.59	
10.13	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement (2018 Form). (2)	10-K	11/7/2018	10.60	
10.14	QUALCOMM Incorporated Non-Qualified Deferred Compensation Plan, as amended and restated effective January 1, 2021. (2)	10-Q	2/3/2021	10.16	
10.15	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award RTSR Shares Grant Notice and ROIC Shares Grant Notice, and Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Agreement (September 30, 2019 - September 25, 2022 Performance Period). (2)	10-K	11/6/2019	10.29	
10.16	Qualcomm Incorporated 2021 Director Compensation Plan. (2)	10-K	11/4/2020	10.22	
10.17	Form of 2021 Annual Cash Incentive Plan Performance Unit Agreement (2)	10-Q	2/3/2021	10.19	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.18	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement (2020 Form). (2)	10-Q	2/3/2021	10.20	
10.19	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement (2020 Form). (2)	10-K	11/4/2020	10.21	
10.20	Special Advisor Employment Agreement between the Company and Steven M. Mollenkopf dated as of January 4, 2021. (2)	10-Q	4/28/2021	10.23	
10.21	Investment and Separation Matters Agreement, dated as of October 4, 2021, by and among QUALCOMM Incorporated, SSW HoldCo LP and SSW Merger Sub Corp (1)	8-K	10/4/2021	10.1	
10.22	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notices and Executive Performance Stock Unit Award Agreement (2021 Form). (2)				X
10.23	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Restricted Stock Unit Award Grant Notice and Executive Restricted Stock Unit Award Agreement (2021 Form). (2)				X
10.24	Qualcomm Incorporated 2022 Director Compensation Plan. (2)				X
21	Subsidiaries of the Company.				X
23.1	Consent of Independent Registered Public Accounting Firm.				X
31.1	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Cristiano R. Amon.				X
31.2	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Akash Palkhiwala.				X
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Cristiano R. Amon.				X
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Akash Palkhiwala.				X
101.INS	Inline XBRL Instance Document.				X
101.SCH	Inline XBRL Taxonomy Extension Schema.				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase.				X
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase.				X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase.				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase.				X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).				

(1) We shall furnish supplementally a copy of any omitted schedule to the Commission upon request.

(2) Indicates management contract or compensatory plan or arrangement required to be identified pursuant to Item 15(a).

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

	QUALCOMM Incorporated	
November 3, 2021	By	/s/ Cristiano R. Amon
		Cristiano R. Amon President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Cristiano R. Amon Cristiano R. Amon	President and Chief Executive Officer, and Director (Principal Executive Officer)	November 3, 2021
/s/ Akash Palkhiwala Akash Palkhiwala	Chief Financial Officer (Principal Financial Officer)	November 3, 2021
/s/ Erin Polek Erin Polek	Senior Vice President, Corporate Controller and Chief Accounting Officer (Principal Accounting Officer)	November 3, 2021
/s/ Sylvia Acevedo Sylvia Acevedo	Director	November 3, 2021
/s/ Mark Fields Mark Fields	Director	November 3, 2021
/s/ Jeffrey W. Henderson Jeffrey W. Henderson	Director	November 3, 2021
/s/ Gregory N. Johnson Gregory N. Johnson	Director	November 3, 2021
/s/ Ann M. Livermore Ann M. Livermore	Director	November 3, 2021
/s/ Harish Manwani Harish Manwani	Director	November 3, 2021
/s/ Mark D. McLaughlin Mark D. McLaughlin	Chair of the Board	November 3, 2021
/s/ Jamie S. Miller Jamie S. Miller	Director	November 3, 2021
/s/ Clark T. Randt, Jr. Clark T. Randt, Jr.	Director	November 3, 2021
/s/ Irene B. Rosenfeld Irene B. Rosenfeld	Director	November 3, 2021
/s/ Kornelis (Neil) Smit Kornelis (Neil) Smit	Director	November 3, 2021
/s/ Jean-Pascal Tricoire Jean-Pascal Tricoire	Director	November 3, 2021
/s/ Anthony J. Vinciquerra Anthony J. Vinciquerra	Director	November 3, 2021

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of QUALCOMM Incorporated

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of QUALCOMM Incorporated and its subsidiaries (the "Company") as of September 26, 2021 and September 27, 2020, and the related consolidated statements of operations, comprehensive income, stockholders' equity and cash flows for each of the three years in the period ended September 26, 2021, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of September 26, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 26, 2021 and September 27, 2020, and the results of its operations and its cash flows for each of the three years in the period ended September 26, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 26, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Changes in Accounting Principles
As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in fiscal 2020 and the manner in which it accounts for revenues from contracts with customers and income tax effects of intra-entity transfers of assets other than inventory in fiscal 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue recognition – Qualcomm CDMA Technologies (QCT) customer incentive arrangements

As described in Notes 1 and 2 to the consolidated financial statements, the Company's QCT segment, which recorded revenues of $27.0 billion in fiscal 2021, records reductions to revenues for customer incentive arrangements, including volume-related and other pricing rebates and cost reimbursements for marketing and other activities involving certain products and technologies, in the period that the related revenues are earned. For certain QCT customer incentive arrangements, there is complexity in applying certain contractual terms to determine the amount recorded as a reduction to revenues. The amounts accrued for customer incentive arrangements are recorded as a reduction to accounts receivable, net or as other current liabilities based on whether the Company has the intent and contractual right of offset. Certain amounts recorded as a reduction to revenues for customer incentive arrangements are considered variable consideration and are included in the transaction price primarily based on estimating the most likely amount expected to be provided to the customer.

The principal considerations for our determination that performing procedures relating to revenue recognition of QCT customer incentive arrangements is a critical audit matter are the significant audit effort in performing procedures and evaluating audit evidence obtained related to the completeness and accuracy of reductions to QCT revenues recognized.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's review of and accounting for customer incentive arrangements as well as controls relating to management's review over the completeness and accuracy of reductions to revenues in fiscal 2021 and accruals for customer incentive arrangements as of the balance sheet date. These procedures also included, among others, testing the completeness and accuracy of customer incentive arrangement reductions to revenues and customer incentive arrangement accruals recorded in the consolidated financial statements, and recalculating, on a test basis, reductions to revenues and accruals for customer incentive arrangements based upon customer-specific contractual terms.

/s/ PricewaterhouseCoopers LLP

San Diego, California
November 3, 2021

We have served as the Company's auditor since 1985.

QUALCOMM Incorporated
CONSOLIDATED BALANCE SHEETS
(In millions, except par value amounts)

	September 26, 2021	September 27, 2020
ASSETS		
Current assets:		
Cash and cash equivalents	$ 7,116	$ 6,707
Marketable securities	5,298	4,507
Accounts receivable, net	3,579	4,003
Inventories	3,228	2,598
Other current assets	854	704
Total current assets	20,075	18,519
Deferred tax assets	1,591	1,351
Property, plant and equipment, net	4,559	3,711
Goodwill	7,246	6,323
Other intangible assets, net	1,458	1,653
Other assets	6,311	4,037
Total assets	$ 41,240	$ 35,594
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Trade accounts payable	$ 2,750	$ 2,248
Payroll and other benefits related liabilities	1,531	1,053
Unearned revenues	612	568
Short-term debt	2,044	500
Other current liabilities	5,014	4,303
Total current liabilities	11,951	8,672
Unearned revenues	364	761
Income taxes payable	1,713	1,872
Long-term debt	13,701	15,226
Other liabilities	3,561	2,986
Total liabilities	31,290	29,517
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; 8 shares authorized; none outstanding	—	—
Common stock and paid-in capital, $0.0001 par value; 6,000 shares authorized; 1,125 and 1,131 shares issued and outstanding, respectively	—	586
Retained earnings	9,822	5,284
Accumulated other comprehensive income	128	207
Total stockholders' equity	9,950	6,077
Total liabilities and stockholders' equity	$ 41,240	$ 35,594

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF OPERATIONS
(In millions, except per share data)

	Year Ended		
	September 26, 2021	September 27, 2020	September 29, 2019
Revenues:			
Equipment and services	$ 26,741	$ 16,298	$ 14,611
Licensing	6,825	7,233	9,662
Total revenues	33,566	23,531	24,273
Costs and expenses:			
Cost of revenues	14,262	9,255	8,599
Research and development	7,176	5,975	5,398
Selling, general and administrative	2,339	2,074	2,195
Other	—	(28)	414
Total costs and expenses	23,777	17,276	16,606
Operating income	9,789	6,255	7,667
Interest expense	(559)	(602)	(627)
Investment and other income, net	1,044	66	441
Income before income taxes	10,274	5,719	7,481
Income tax expense	(1,231)	(521)	(3,095)
Net income	$ 9,043	$ 5,198	$ 4,386
Basic earnings per share	$ 7.99	$ 4.58	$ 3.63
Diluted earnings per share	$ 7.87	$ 4.52	$ 3.59
Shares used in per share calculations:			
Basic	1,131	1,135	1,210
Diluted	1,149	1,149	1,220

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In millions)

	Year Ended		
	September 26, 2021	**September 27, 2020**	**September 29, 2019**
Net income	$ 9,043	$ 5,198	$ 4,386
Other comprehensive (loss) income, net of income taxes:			
Foreign currency translation gains (losses)	40	60	(110)
Net unrealized (losses) gains on certain available-for-sale securities	(5)	22	(6)
Net unrealized (losses) gains on derivative instruments	(53)	29	26
Other (losses) gains	(2)	7	(19)
Other reclassifications included in net income	(59)	(11)	(5)
Total other comprehensive (loss) income	(79)	107	(114)
Comprehensive income	$ 8,964	$ 5,305	$ 4,272

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In millions)

	Year Ended		
	September 26, 2021	September 27, 2020	September 29, 2019
Operating Activities:			
Net income	$ 9,043	$ 5,198	$ 4,386
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization expense	1,582	1,393	1,401
Income tax provision (less than) in excess of income tax payments	(245)	(309)	1,976
Share-based compensation expense	1,663	1,212	1,037
Net gains on marketable securities and other investments	(1,002)	(336)	(356)
Indefinite and long-lived asset impairment charges	5	—	203
Impairment losses on marketable securities and other investments	33	405	135
Other items, net	(82)	(142)	(272)
Changes in assets and liabilities:			
Accounts receivable, net	426	(1,529)	1,373
Inventories	(622)	(1,157)	273
Other assets	(1,649)	(110)	78
Trade accounts payable	495	907	(443)
Payroll, benefits and other liabilities	1,091	528	(2,376)
Unearned revenues	(202)	(246)	(129)
Net cash provided by operating activities	10,536	5,814	7,286
Investing Activities:			
Capital expenditures	(1,888)	(1,407)	(887)
Purchases of debt and equity marketable securities	(5,907)	(6,213)	—
Proceeds from sales and maturities of debt and equity marketable securities	5,555	2,399	198
Acquisitions and other investments, net of cash acquired	(1,377)	(185)	(252)
Proceeds from other investments	320	100	68
Other items, net	(59)	43	67
Net cash used by investing activities	(3,356)	(5,263)	(806)
Financing Activities:			
Proceeds from short-term debt	2,886	2,848	5,989
Repayment of short-term debt	(2,885)	(2,846)	(6,492)
Proceeds from long-term debt	—	1,988	—
Repayment of long-term debt	—	(2,219)	—
Proceeds from issuance of common stock	347	329	414
Repurchases and retirements of common stock	(3,366)	(2,450)	(1,793)
Dividends paid	(3,008)	(2,882)	(2,968)
Payments of tax withholdings related to vesting of share-based awards	(737)	(347)	(268)
Payment of purchase consideration related to RF360 Holdings	(16)	(55)	(1,163)
Other items, net	(19)	(73)	(105)
Net cash used by financing activities	(6,798)	(5,707)	(6,386)
Effect of exchange rate changes on cash and cash equivalents	27	24	(32)
Net increase (decrease) in total cash and cash equivalents	409	(5,132)	62
Total cash and cash equivalents at beginning of period	6,707	11,839	11,777
Total cash and cash equivalents at end of period	$ 7,116	$ 6,707	$ 11,839

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions, except per share data)

	Year Ended		
	September 26, 2021	**September 27, 2020**	**September 29, 2019**
Total stockholders' equity, beginning balance	$ 6,077	$ 4,909	$ 807
Common stock and paid-in capital:			
Balance at beginning of period	586	343	—
Common stock issued under employee benefit plans	345	331	417
Repurchases and retirements of common stock	(1,958)	(1,042)	(910)
Share-based compensation	1,754	1,301	1,104
Tax withholdings related to vesting of share-based payments	(737)	(347)	(268)
Stock awards assumed in acquisition	10	—	—
Balance at end of period	—	586	343
Retained earnings:			
Balance at beginning of period	5,284	4,466	542
Cumulative effect of accounting changes	—	—	3,455
Net income	9,043	5,198	4,386
Repurchases and retirements of common stock	(1,408)	(1,408)	(883)
Dividends	(3,097)	(2,972)	(3,034)
Balance at end of period	9,822	5,284	4,466
Accumulated other comprehensive income:			
Balance at beginning of period	207	100	265
Cumulative effect of accounting changes	—	—	(51)
Other comprehensive (loss) income	(79)	107	(114)
Balance at end of period	128	207	100
Total stockholders' equity, ending balance	$ 9,950	$ 6,077	$ 4,909
Dividends per share announced	$ 2.66	$ 2.54	$ 2.48

See accompanying notes.

Note 1. Significant Accounting Policies

We are a global leader in the development and commercialization of foundational technologies for the wireless industry. Our technologies and products are used in mobile devices and other wireless products, including those used in the internet of things (IoT) and automotive systems for telematics, connectivity and digital cockpit (also known as infotainment). We derive revenues principally from sales of integrated circuit products and through the licensing of our intellectual property, including patents and other rights.

Principles of Consolidation. The consolidated financial statements include the assets, liabilities and operating results of Qualcomm and its subsidiaries. Intercompany transactions and balances have been eliminated.

Financial Statement Preparation. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts and the disclosure of contingent amounts in our consolidated financial statements and the accompanying notes. Examples of our significant accounting estimates and policies that may involve a higher degree of judgment and complexity than others include: the estimation of sales-based royalty revenues; the impairment of non-marketable equity investments; the valuation of inventories; the impairment of goodwill and long-lived assets; the recognition, measurement and disclosure of loss contingencies related to legal and regulatory proceedings; and the calculation of our income tax provision, including the recognition and measurement of uncertain tax positions. Actual results could differ from those estimates. Certain prior year amounts have been reclassified to conform to the current year presentation.

Fiscal Year. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. The fiscal years ended September 26, 2021, September 27, 2020 and September 29, 2019 each included 52 weeks.

Recently Adopted Accounting Pronouncements.

Financial Assets: In June 2016, the Financial Accounting Standards Board (FASB) issued new accounting guidance that changed the accounting for recognizing impairments of financial assets (ASC 326). Under the new accounting guidance, credit losses for financial assets held at amortized cost (such as accounts receivable) are estimated based on expected losses rather than the previous incurred loss impairment model. The new accounting guidance also eliminated the concept of other-than-temporary impairment with credit losses related to available-for-sale debt securities recorded through an allowance for credit losses rather than as a reduction in the amortized cost basis of the securities. We adopted the new accounting guidance in the first quarter of fiscal 2021 under the modified retrospective transition method, except for certain available-for-sale debt securities where the prospective transition method was required, and as a result, prior period results have not been restated. The impact upon adoption was not material to our consolidated financial statements. The future impact of such accounting guidance will largely depend on the future composition and credit quality of our investment portfolio and accounts receivable, as well as future economic conditions.

Leases: In February 2016, the FASB issued new accounting guidance related to leases that outlines a new comprehensive lease accounting model and requires expanded disclosures (ASC 842). Under the new accounting guidance, we are required to recognize right-of-use assets and corresponding lease liabilities on the consolidated balance sheet. We adopted ASC 842 in the first quarter of fiscal 2020 using the modified retrospective approach, with the cumulative effect of initial adoption recorded as an adjustment to our opening consolidated balance sheet at September 30, 2019. We elected to not record leases with a term of 12 months or less on our consolidated balance sheet. In addition, we applied the package of practical expedients permitted under the transition guidance, which among other things, does not require reassessment of lease classification upon adoption. Finance leases were not material for all periods presented. Adoption of the new accounting guidance did not have a material impact on our consolidated statements of operations or cash flows. Results for fiscal 2019 have not been restated and continue to be reported in accordance with the accounting guidance in effect for those periods.

Revenue Recognition: In May 2014, the FASB issued new accounting guidance related to revenue recognition (ASC 606). We adopted ASC 606 in the first quarter of fiscal 2019 using the modified retrospective transition method only to those contracts that were not completed as of October 1, 2018. We recognized the cumulative effect of initially applying the new revenue accounting guidance as an adjustment to opening retained earnings.

Income Taxes: In October 2016, the FASB issued new accounting guidance that changes the accounting for the income tax effects of intra-entity transfers of assets other than inventory. We adopted the new accounting guidance in the first quarter of fiscal 2019 using the modified retrospective transition method, with the cumulative effect of applying the new accounting guidance recognized as an adjustment to opening retained earnings of $2.6 billion, primarily as the result of establishing a deferred tax asset on the basis difference of certain intellectual property distributed from one of our foreign subsidiaries to a subsidiary in the United States in fiscal 2018.

Cash Equivalents. We consider all highly liquid investments with original maturities of 90 days or less to be cash equivalents. Cash equivalents may be comprised of money market funds, certificates of deposit, commercial paper, corporate bonds and notes, certain bank time and demand deposits and government agencies' securities. The carrying amounts approximate fair value due to the short maturities of these instruments.

Marketable Securities. As a result of the adoption of ASC 326, we revised our accounting policy beginning in fiscal 2021 as follows.

Marketable securities include marketable equity securities, available-for-sale debt securities and, from time-to-time, certain time deposits. We classify marketable securities as current or noncurrent based on the nature of the securities and their availability for use in current operations. Marketable securities are stated at fair value with all realized and unrealized gains and losses on investments in marketable equity securities and realized gains and losses on available-for-sale debt securities recognized in investment and other income, net. Debt securities are classified as available for sale or held to maturity at the time of purchase and reevaluated at each balance sheet date. The realized and unrealized gains and losses on marketable securities are determined using the specific identification method.

If a debt security has an unrealized loss and we either intend to sell the security or it is more likely than not that we will be required to sell the security before its anticipated recovery, we record an impairment charge to investment and other income, net for the entire amount of the unrealized loss and adjust the amortized cost basis of the security. For the remaining debt securities, if an unrealized loss exists, we separate the impairment into the portion of the loss related to credit factors and the portion of the loss that is not related to credit factors. Unrealized gains or unrealized losses that are not related to credit factors on available-for-sale debt securities are recorded as a component of accumulated other comprehensive income, net of income taxes. Unrealized losses that are related to credit loss factors on available-for-sale debt securities and subsequent adjustments to the credit loss are recorded as an allowance for credit losses, which is included in investment and other income, net. In evaluating whether a credit loss exists, we consider a variety of factors, including the significance of the decline in value as compared to the cost basis; underlying factors contributing to a decline in the prices of securities in a single asset class; the security's relative performance versus its peers, sector or asset class; the market and economy in general; views of external investment managers; news or financial information that has been released specific to the investee; and the outlook for the overall industry in which the investee operates.

Equity Method and Non-marketable Equity Investments. Equity investments for which we have significant influence, but not control, over the investee and are not the primary beneficiary of the investee's activities are accounted for under the equity method. Our share of gains and losses in equity method investments are recorded in investment and other income, net. We eliminate unrealized profit or loss related to transactions with equity method investees in relation to our ownership interest in the investee, which is recorded as a component of equity in net earnings (losses) in investees in investment and other income, net. Non-marketable equity investments (for which we do not have significant influence or control) are investments without readily determinable fair values that are recorded based on initial cost minus impairment, if any, plus or minus adjustments resulting from observable price changes in orderly transactions for identical or similar securities, if any. All gains and losses on investments in non-marketable equity securities, realized and unrealized, are recognized in investment and other income, net. We monitor equity method and non-marketable equity investments for events or circumstances that could indicate the investments are impaired, such as a deterioration in the investee's financial condition and business forecasts and lower valuations in recently completed or anticipated financings, and recognize a charge to investment and other income, net for the difference between the estimated fair value and the carrying value. For equity method investments, we record impairment losses in earnings only when impairments are considered other-than-temporary.

Derivatives. Our primary objectives for holding derivative instruments are to manage foreign exchange risk for certain foreign currency revenues, operating expenses, receivables and payables and to manage interest rate risk on our long-term debt. Derivative instruments are recorded at fair value and included in other current or noncurrent assets or other current or noncurrent liabilities based on their maturity dates. Counterparties to these derivative instruments are all major banking institutions.

Foreign Currency Hedges: We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative instruments, including foreign currency forward and option contracts with financial counterparties, that may or may not be designated as hedging instruments. At September 26, 2021, these derivative instruments have maturity dates between one and 21 months. Gains and losses arising from such contracts that are designated as cash flow hedging instruments are recorded as a component of accumulated other comprehensive income as gains and losses on derivative instruments, net of income taxes. The hedging gains and losses in accumulated other comprehensive income are subsequently reclassified to revenues or costs and expenses, as applicable, in the consolidated statements of operations in the same period in which the underlying transactions affect our earnings. The cash flows associated with derivative instruments designated as cash flow hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction. The fair values of our foreign currency forward and option contracts used to hedge foreign currency risk designated as cash flow hedges recorded in total assets and in total liabilities were $42 million and negligible, respectively, at September 26, 2021. The fair values of our foreign currency forward and option contracts used to hedge foreign currency risk designated as cash flow hedges recorded in total assets and in total liabilities were $51 million and negligible, respectively, at September 27, 2020.

For foreign currency forward and option contracts not designated as hedging instruments, the changes in fair value are recorded in investment and other income, net in the period of change. The cash flows associated with such derivative instruments not designated as hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction. The fair values of our foreign currency forward and option contracts not designated as hedging instruments were negligible at September 26, 2021 and September 27, 2020.

Interest Rate Swaps: From time to time, we manage our exposure to certain interest rate risks related to our long-term debt through the use of interest rate swaps. Such swaps allow us to effectively convert fixed-rate payments into floating-rate payments based on LIBOR. These transactions are designated as fair value hedges, and the gains and losses related to changes in the fair value of the interest rate swaps substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to changes in the market interest rates. The net gains and losses on the interest rate swaps, as well as the offsetting gains or losses on the related fixed-rate debt attributable to the hedged risks, are recognized in earnings as interest expense in the current period. The interest settlement payments associated with the interest rate swap agreements are classified as cash flows from operating activities in the consolidated statements of cash flows. There were no outstanding interest rate swaps related to long-term debt at September 26, 2021 and September 27, 2020.

During fiscal 2021, we entered into forward-starting interest rate swaps to hedge the variability of forecasted interest payments on anticipated debt issuances through 2025. These transactions are designated as cash flow hedges of a forecasted transaction. The gains and losses arising from such contracts are recorded as a component in accumulated other comprehensive income as gains and losses on derivative instruments, net of taxes. When the anticipated debt issuances are completed, the hedging gains and losses in accumulated other comprehensive income are reclassified as interest expense over the terms of the related debt issued. The fair values of our forward-starting interest rate swaps recorded in total liabilities were $105 million at September 26, 2021.

Gross Notional Amounts: The gross notional amounts of our foreign currency and interest rate derivatives by instrument type were as follows (in millions):

	September 26, 2021	September 27, 2020
Forwards	$ 2,449	$ 1,096
Options	870	789
Swaps	2,600	—
	$ 5,919	$ 1,885

The gross notional amounts of our derivatives by currency were as follows (in millions):

	September 26, 2021	September 27, 2020
Chinese renminbi	$ 1,627	$ 1,058
Indian rupee	1,262	595
British pound sterling	83	—
Japanese yen	27	33
United States dollar	2,920	199
	$ 5,919	$ 1,885

Other Hedging Activities. We have designated $1.5 billion of foreign currency-denominated liabilities, excluding accrued interest, related to the fines imposed by the European Commission as hedges of our net investment in certain foreign subsidiaries at September 26, 2021 and September 27, 2020. Gains and losses arising from the portion of these balances that are designated as net investment hedges are recorded as a component of accumulated other comprehensive income as foreign currency translation adjustment.

Fair Value Measurements. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants as of the measurement date. Applicable accounting guidance provides an established hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs that market participants would use in valuing the asset or liability and are developed based on market data obtained from sources independent of us. Unobservable inputs are inputs that reflect our assumptions about the factors that market participants would use in valuing the asset or liability. There are three levels of inputs that may be used to measure fair value:

- Level 1 includes financial instruments for which quoted market prices for identical instruments are available in active markets.
- Level 2 includes financial instruments for which there are inputs other than quoted prices included within Level 1 that are observable for the instrument.
- Level 3 includes financial instruments for which fair value is derived from valuation techniques in which one or more significant inputs are unobservable, including our own assumptions.

Assets and liabilities measured at fair value are classified based on the lowest level of input that is significant to the fair value measurement. We review the fair value hierarchy classification on a quarterly basis. Changes in the observability of valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy. We recognize transfers into and out of levels within the fair value hierarchy at the end of the fiscal month in which the actual event or change in circumstances that caused the transfer to occur.

Cash Equivalents and Marketable Securities: With the exception of auction rate securities, we obtain pricing information from quoted market prices, pricing vendors or quotes from brokers/dealers. We conduct reviews of our primary pricing vendors to determine whether the inputs used in the vendor's pricing processes are deemed to be observable. The fair value for interest-bearing securities includes accrued interest.

The fair value of U.S. Treasury securities and government-related securities, corporate bonds and notes and common stock is generally determined using standard observable inputs, including reported trades, quoted market prices, matrix pricing, benchmark yields, broker/dealer quotes, issuer spreads, two-sided markets and/or benchmark securities.

The fair value of mortgage- and asset-backed securities is derived from the use of matrix pricing (prices for similar securities) or, in some cases, cash flow pricing models with observable inputs, such as contractual terms, maturity, credit rating and/or securitization structure to determine the timing and amount of future cash flows.

The fair value of auction rate securities is estimated using a discounted cash flow model that incorporates transaction details, such as contractual terms, maturity and timing and amount of future cash flows, as well as assumptions related to liquidity, default likelihood and recovery, the future state of the auction rate market and credit valuation adjustments of market participants. Though most of the securities we held were pools of student loans guaranteed by the United States government, prepayment speeds and illiquidity discounts are considered significant unobservable inputs, and therefore, auction rate securities were included in Level 3. During fiscal 2021, we sold all of our investments held in auction rate securities.

Derivative Instruments: Derivative instruments that are traded on an exchange are valued using quoted market prices and are included in Level 1. Derivative instruments that are not traded on an exchange are valued using conventional calculations/models that are primarily based on observable inputs, such as foreign currency exchange rates, volatilities and interest rates, and therefore, such derivative instruments are included in Level 2.

Other Investments and Other Liabilities: Other investments and other liabilities included in Level 1 are comprised of our deferred compensation plan liabilities and related assets, which consist of mutual funds and are included in other current assets and other assets. Gains and losses on the revaluation of our deferred compensation plan assets are recorded in investment and other income, net and are not allocated to our segments. Corresponding offsetting amounts related to the revaluation of our deferred compensation plan liabilities are included in unallocated operating expenses. Other investments included in Level 3 are comprised of contingently issuable equity instruments and warrants issued in connection with certain mergers and initial public offerings of our non-marketable equity investees and convertible debt instruments issued by private companies. The inputs we use to estimate the fair values of these instruments are generally unobservable, and therefore, they are included in Level 3.

Nonrecurring Fair Value Measurements: We measure certain assets and liabilities at fair value on a nonrecurring basis. These assets and liabilities include equity method and non-marketable equity investments, assets acquired and liabilities assumed in an acquisition or in a nonmonetary exchange, and property, plant and equipment and intangible assets that are written down to fair value when they are held for sale or determined to be impaired, all of which are generally measured based on unobservable inputs using an income or market approach.

Inventories. Inventories are valued at the lower of cost and net realizable value using the first-in, first-out method. Recoverability of inventories is assessed based on review of future customer demand that considers multiple factors, including committed purchase orders from customers as well as purchase commitment projections provided by customers and our own forecasts of customer demand, among other factors. This valuation also requires us to make judgments and assumptions based on information currently available about market conditions, including competition, product pricing, product life cycle, development plans and other broader market conditions that may impact customer demand, such as the impact of certain capacity constraints experienced across the semiconductor industry in fiscal 2021 and the impacts of COVID-19 in fiscal 2020. As we move to smaller geometry process technologies, the manufacturing lead-time increases, resulting in an increased reliance on our own forecasts of customer demand, rather than our customers' forecasts. If we overestimate demand for our products, the amount of our loss will be impacted by our contractual ability to reduce inventory purchases from our suppliers, including those under our multi-year capacity purchase commitments. Our assumptions of future product demand are inherently uncertain, and changes in our estimates and assumptions may cause us to record additional write-downs in the future if demand forecasted for specific products is greater than actual demand.

Property, Plant and Equipment. Property, plant and equipment are recorded at cost and depreciated or amortized using the straight-line method over their estimated useful lives. Upon the retirement or disposition of property, plant and equipment, the related cost and accumulated depreciation or amortization are removed, and a gain or loss is recorded, when appropriate. Buildings on owned land are depreciated over 30 years, and building improvements are depreciated over 15 years. Leasehold improvements and buildings on leased land are amortized over the shorter of their estimated useful lives, not to exceed 15 years and 30 years, respectively, or the remaining term of the related lease. Other property, plant and equipment have useful lives ranging from 2 to 25 years. Maintenance, repairs and minor renewals or betterments are charged to expense as incurred.

Operating Leases. Operating lease assets and liabilities are recognized for leases with lease terms greater than 12 months based on the present value of the future lease payments over the lease term at the commencement date. Operating leases are included in other assets, other current liabilities and other liabilities on our consolidated balance sheet. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise such option. We account for substantially all lease and related non-lease components together as a single lease component. Operating lease expense is recognized on a straight-line basis over the lease term.

Goodwill and Other Intangible Assets. Goodwill represents the excess of purchase price over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Acquired intangible assets other than goodwill are amortized over their useful lives unless the lives are determined to be indefinite. For intangible assets purchased in a business combination, the estimated fair values of the assets received are used to establish their recorded values. For intangible assets acquired in a nonmonetary exchange, the estimated fair values of the assets transferred (or the estimated fair values of the assets received, if more clearly evident) are used to establish their recorded values, unless the values of neither the assets received nor the assets transferred are determinable within reasonable limits, in which case the assets received are measured based on the carrying values of the assets transferred. Valuation techniques consistent with the market approach, income approach and/or cost approach are used to measure fair value. An estimate of fair value can be affected by many assumptions that require significant judgment. For example, the income approach generally requires us to use assumptions to estimate future cash flows including those related to total addressable market, pricing and share forecasts, competition, technology obsolescence, future tax rates and discount rates. Our estimate of the fair value of certain assets may differ materially from that determined by others who use different assumptions or utilize different business models and from the future cash flows actually realized.

Impairment of Goodwill, Other Indefinite-Lived Assets and Long-Lived Assets. Goodwill and other indefinite-lived intangible assets are tested annually for impairment in the fourth fiscal quarter and in interim periods, if events or changes in circumstances indicate that the assets may be impaired. If a qualitative assessment is used and we determine that the fair value of a reporting unit or indefinite-lived intangible asset is more likely than not (i.e., a likelihood of more than 50%) less than its carrying amount, a quantitative impairment test will be performed. If goodwill is quantitatively assessed for impairment and a reporting unit's carrying value exceeds its fair value, the difference is recorded as an impairment. Other indefinite-lived intangible assets are quantitatively assessed for impairment, if necessary, by comparing their estimated fair values to their carrying values. If the carrying value exceeds the fair value, the difference is recorded as an impairment. Our judgments regarding the existence of impairment indicators and future cash flows related to goodwill and long-lived assets may be based on operational performance of our businesses, market conditions, expected selling price and/or other factors. Although there are inherent uncertainties in this assessment process, the estimates and assumptions we use, including estimates of future cash flows and discount rates, are consistent with our internal planning, when appropriate. If these estimates or their related assumptions change in the future, we may be required to record an impairment charge on a portion or all of our goodwill and/or long-lived assets. Furthermore, we cannot predict the occurrence of future impairment-triggering events nor the impact such events might have on our reported asset values. Future events could cause us to conclude that impairment indicators exist, and that goodwill associated with our acquired businesses are impaired.

Long-lived assets, such as property, plant and equipment and intangible assets subject to amortization, are reviewed for impairment when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Recoverability of assets to be held and used is measured by comparing the carrying amount of an asset or asset group to estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset or asset group exceeds its estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset or asset group exceeds the estimated fair value of the asset or asset group. Long-lived assets to be disposed of by sale are reported at the lower of their carrying amounts or their estimated fair values less costs to sell and are not depreciated.

Revenue Recognition. We derive revenues principally from sales of integrated circuit products and licensing of our intellectual property. We also generate revenues from licensing system software and by performing development and other services and from other product sales. The timing of revenue recognition and the amount of revenue actually recognized in each case depends upon a variety of factors, including the specific terms of each arrangement and the nature of our performance obligations.

Revenues from sales of our products are recognized upon transfer of control to the customer, which is generally at the time of shipment. Revenues from providing services are typically recognized over time as our performance obligation is satisfied. Revenues from providing services and licensing system software were each less than 5% of total revenues for all periods presented.

We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Licensees pay royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets, laptops and smartwatches, and provide for a maximum royalty amount payable per device. We estimate and recognize sales-based royalties on such licensed products in the period in which the associated sales occur, considering all relevant information (historical, current and forecasted) that is reasonably available to us. Our estimates of sales-based royalties are based largely on preliminary royalty estimates provided by our licensees and, to a lesser extent, an assessment of the volume of devices supplied into the market that incorporate or use our licensed intellectual property, combined with an estimate of the mix of such sales on a licensee-by-licensee basis, as well as the licensees' average wholesale prices of such products. We have recognized immaterial differences between preliminary royalty estimates provided to us by licensees and actual amounts reported and paid by licensees, which are generally received the following quarter, as licensees have not completed their royalty reporting process at the time estimates are provided to us, and in certain cases, they do not provide all necessary information in order for us to calculate an estimate of royalties due, which requires us to independently estimate certain information. We also consider in our estimates of sales-based royalties any changes in pricing we plan or expect to make and certain constraints on our ability to estimate such royalties. As a result of recognizing revenues in the period in which the licensees' sales occur using estimates, adjustments to revenues are required in subsequent periods to reflect changes in estimates as new information becomes available, primarily resulting from actual amounts reported by our licensees.

License agreements that require payment of license fees contain a single performance obligation that represents ongoing access to a portfolio of intellectual property over the license term since such agreements provide the licensee the right to access a portfolio of intellectual property that exists at inception of the license agreement and to updates and new intellectual property that is added to the licensed portfolio during the term of the agreement that are highly interdependent or interrelated. Since we expect to expend efforts to develop and transfer updates to our licensed portfolio on an even basis, license fees are recognized as revenues on a straight-line basis over the estimated period of benefit of the license to the licensee.

We account for a contract with a customer/licensee when it is legally enforceable, the parties are committed to perform their respective obligations, the rights of the parties regarding the goods and/or services to be transferred are identified, payment terms are identified, the contract has commercial substance and collectability of substantially all of the consideration is probable. If all such conditions are not met, revenues and any associated receivables are generally not recognized until such time that the required conditions are met. Cash collected from customers prior to a contract existing is recorded to other customer-related liabilities in other current liabilities.

From time to time, regulatory authorities investigate our business practices, particularly with respect to our licensing business, and institute proceedings against us. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others, the loss of our ability to enforce one or more of our patents; injunctions; monetary damages or fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed original equipment manufacturers (OEMs) or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. Additionally, from time to time, companies initiate various strategies in an attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property, which may include disputing, underreporting, underpaying, not reporting and/or not paying royalties owed to us under their license agreements with us, or reporting to us in a manner that is not in compliance with their contractual obligations. In such cases, we estimate and recognize licensing revenues only when we have a contract, as defined in the revenue recognition guidance, which includes, among other items, evaluating whether our license agreements remain valid and enforceable and evaluating licensees' conduct and whether they remain committed to perform their respective obligations. We also estimate and recognize licensing revenues only to the extent it is probable that a significant reversal of cumulative revenues recognized will not occur, which includes, among other items, determining the expected impact, if any, to revenues of any license agreements that may be renegotiated and/or are newly entered into. We analyze the risk of a significant revenue reversal considering both the likelihood and magnitude of the reversal and, if necessary, constrain the amount of estimated revenues recognized in order to mitigate this risk, which may result in recognizing revenues less than amounts contractually owed to us. These aforementioned estimates may require significant judgment.

We measure revenues (including our estimates of sales-based royalties) based on the amount of consideration we expect to receive in exchange for products or services. We record reductions to revenues for customer incentive arrangements, including volume-related and other pricing rebates and cost reimbursements for marketing and other activities involving certain of our products and technologies, in the period that the related revenues are earned. For certain QCT (Qualcomm CDMA Technologies) customer incentive arrangements, there is complexity in applying certain contractual terms to determine the amount recorded as a reduction to revenues. No significant reversals of revenues have been made related to such amounts previously recorded. The amounts accrued for customer incentive arrangements are recorded as a reduction to accounts receivable, net or as other current liabilities based on whether we have the intent and contractual right of offset. Certain amounts recorded as a reduction to revenues for customer incentive arrangements are considered variable consideration and are included in the transaction price primarily based on estimating the most likely amount expected to be provided to the customer/licensee.

Adjustments made to revenues in subsequent periods to reflect changes in estimates as new information becomes available are included in our disclosure of revenues recognized from previously satisfied performance obligations.

Revenues recognized from sales of our products and sales-based royalties are generally included in accounts receivable, net (including unbilled receivables) based on our unconditional right to payment for satisfied or partially satisfied performance obligations.

Concentrations. A significant portion of our revenues are concentrated with a small number of customers/licensees of our QCT (Qualcomm CDMA Technologies) and QTL (Qualcomm Technology Licensing) segments. The comparability of customer/licensee concentrations for the periods presented are impacted by the timing of customer/licensees device launches and/or innovation cycles, among other fluctuations in demand. Revenues from each customer/licensee that were 10% or greater of total revenues were as follows:

	September 26, 2021	**September 27, 2020**	**September 29, 2019**
Customer/licensee (w)	23 %	10 %	24 %
Customer/licensee (x)	14	19	15
Customer/licensee (y)	13	12	10
Customer/licensee (z)	*	10	*

* Less than 10%

We rely on sole- or limited-source suppliers for some products, particularly products in the QCT segment, subjecting us to possible shortages of raw materials or manufacturing capacity. The loss of a supplier or the inability of a supplier to meet performance or quality specifications or delivery schedules could harm our ability to meet our delivery obligations and/or negatively impact our revenues, business operations and ability to compete for future business.

Share-Based Compensation. Share-based compensation expense for equity-classified awards, principally related to restricted stock units (RSUs), is measured at the grant date, or at the acquisition date for awards assumed in business combinations, based on the estimated fair value of the award and is recognized over the employee’s requisite service period. The fair values of RSUs are estimated based on the fair market values of the underlying stock on the dates of grant or dates the RSUs are assumed. Share-based compensation expense is adjusted to exclude amounts related to share-based awards that are expected to be forfeited.

Legal and Regulatory Proceedings. We are currently involved in certain legal and regulatory proceedings. Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Investigations by antitrust and trade regulation agencies are not conducted in a consistent manner across jurisdictions. Further, each country and agency has different sets of laws, rules and regulations, both substantive and procedural, as well as different legal principles, theories and potential remedies, and some agencies may seek to use the investigation to advance domestic policy goals. Depending on the jurisdiction, these investigations can involve non-transparent procedures under which we may not receive access to evidence relied upon by the enforcement agency or that may be exculpatory and may not be informed of the specific legal theories or evidence considered or relied upon by the agency. Unlike in civil litigation in the United States, in foreign proceedings, we may not be entitled to discovery or depositions, allowed to cross-examine witnesses or confront our accusers. As a result, we may not be aware of, and may not be entitled to know, all allegations against us, or the information or documents provided to, or discovered or prepared by, the agency. Accordingly, we may have little or no idea what an agency’s intent is with respect to liability, penalties or the timing of a decision. In many cases the agencies are given significant discretion, and any available precedent may have limited, if any, predictive value in their jurisdictions, much less in other jurisdictions. Accordingly, we cannot predict the outcome of these matters. A broad range of remedies with respect to our business practices that are deemed to violate applicable laws are potentially available. These remedies may include, among others, injunctions, monetary damages or fines or other orders to pay money and the issuance of orders to cease certain conduct and/or to modify our business practices.

If there is at least a reasonable possibility that a material loss may have been incurred associated with pending legal and regulatory proceedings, we disclose such fact, and if reasonably estimable, we provide an estimate of the possible loss or range of possible loss. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of loss can be reasonably estimated with no best estimate in the range, we record the minimum estimated liability. As additional information becomes available, we assess the potential liability related to pending legal and regulatory proceedings and revise our estimates and update our disclosures accordingly. Significant judgment is required in both the determination of probability and the determination as to whether a loss is reasonably estimable. Our legal costs associated with defending ourself are recorded to expense as incurred.

Foreign Currency. Certain foreign subsidiaries use a local currency as the functional currency. Resulting translation gains or losses are recorded as a component of accumulated other comprehensive income. Transaction gains or losses related to balances denominated in a currency other than the functional currency are recognized in the consolidated statements of operations.

Income Taxes. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. We record a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. We include interest and penalties related to income taxes, including unrecognized tax benefits, within income tax expense. We classify all deferred tax assets and liabilities as noncurrent in the consolidated balance sheets.

Our income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service (IRS) and other tax authorities. In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. While we believe we have appropriate support for the positions taken on our tax returns, we regularly assess the potential outcomes of examinations by tax authorities in determining the adequacy of our provision for income taxes. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known.

We recognize excess tax benefits and shortfall tax detriments associated with share-based awards in the consolidated statements of operations, as a component of income tax expense, when realized.

We are subject to income taxes in the United States and numerous foreign jurisdictions, and the assessment of our income tax positions involves dealing with uncertainties in the application of complex tax laws and regulations in various taxing jurisdictions. In addition, the application of tax laws and regulations is subject to legal and factual interpretation, judgment and uncertainty. Tax laws and regulations themselves are subject to change as a result of changes in fiscal policy, changes in legislation, the evolution of regulations and court rulings. Significant judgments and estimates are required in determining our provision for income taxes, including those related to special deductions such as FDII (foreign-derived intangible income), tax incentives, intercompany research and development cost-sharing arrangements, transfer pricing, tax credits and the realizability of deferred tax assets. While we believe we have appropriate support for the positions we have taken or that we plan to take on our tax returns, we regularly assess the potential outcomes of examinations by taxing authorities in determining the adequacy of our provision for income taxes. Therefore, the actual liability for U.S. or foreign taxes may be materially different from our estimates, which could result in the need to record additional tax liabilities or potentially reverse previously recorded tax liabilities. We are participating in the IRS Compliance Assurance Process program whereby we endeavor to agree with the IRS on the treatment of all issues prior to filing our federal return. A benefit of participation in this program is that post-filing adjustments by the IRS are less likely to occur.

Stock Repurchases. To reflect share repurchases in the consolidated balance sheet, we (i) reduce common stock for the par value of the shares, (ii) reduce paid-in capital for the amount in excess of par to zero during the quarter in which the shares are repurchased and (iii) record the residual amount, if any, to retained earnings.

Earnings (Loss) Per Share. Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted-average number of common shares outstanding during the reporting period. Diluted earnings per share is computed by dividing net income by the combination of the weighted-average number of dilutive common share equivalents, comprised of shares issuable under our share-based compensation plans and shares subject to accelerated share repurchase programs, if any, and the weighted-average number of common shares outstanding during the reporting period. The following table provides information about the diluted earnings per share calculation (in millions):

	2021	2020	2019
Dilutive common share equivalents included in diluted shares	18	14	10
Shares of common stock equivalents not included because the effect would be anti-dilutive or certain performance conditions were not satisfied at the end of the period	—	1	8

Note 2. Composition of Certain Financial Statement Items

Accounts Receivable (in millions)

	September 26, 2021	September 27, 2020
Trade, net of allowances for doubtful accounts	$ 2,214	$ 2,687
Unbilled	1,354	1,305
Other	11	11
	$ 3,579	$ 4,003

In July 2020, we entered into a settlement agreement with Huawei to resolve our prior dispute related to the license agreement that expired on December 31, 2019. We also entered into a new long-term, global patent license agreement that applies to sales of certain wireless products by Huawei beginning on January 1, 2020. As a result, we recorded revenues of $1.8 billion in the fourth quarter of fiscal 2020 related to the full amount due from Huawei under the settlement agreement and amounts paid for the March 2020 and June 2020 quarters under the new global patent license agreement. Accounts receivable at September 27, 2020 included approximately $1.3 billion, excluding the impact of foreign withholding taxes, from Huawei related to the remaining amounts due under the settlement agreement and estimated royalties for sales made in the September 2020 quarter. Since September 27, 2020, Huawei paid all such amounts, including the final installment under the settlement agreement in accordance with the agreed upon payment schedule.

Inventories (in millions)

	September 26, 2021	September 27, 2020
Raw materials	$ 267	$ 94
Work-in-process	1,475	1,155
Finished goods	1,486	1,349
	$ 3,228	$ 2,598

Property, Plant and Equipment (in millions)

	September 26, 2021	September 27, 2020
Land	$ 172	$ 173
Buildings and improvements	1,642	1,606
Computer equipment and software	1,483	1,427
Machinery and equipment	6,420	5,095
Furniture and office equipment	94	90
Leasehold improvements	374	320
Construction in progress	269	134
	10,454	8,845
Less accumulated depreciation and amortization	(5,895)	(5,134)
	$ 4,559	$ 3,711

Depreciation and amortization expense related to property, plant and equipment for fiscal 2021, 2020 and 2019 was $1.0 billion, $772 million and $674 million, respectively.

Goodwill and Other Intangible Assets. We allocate goodwill to our reporting units for impairment testing purposes. The following table presents the goodwill allocated to our reportable and nonreportable segments, as described in Note 8, as well as the changes in the carrying amounts of goodwill during fiscal 2021 and 2020 (in millions):

	QCT	QTL	Nonreportable Segments	Total
Balance at September 29, 2019	$ 5,565	$ 717	$ —	$ 6,282
Foreign currency translation adjustments	40	1	—	41
Balance at September 27, 2020 (1)	5,605	718	—	6,323
Acquisitions	912	5	—	917
Foreign currency translation adjustments	6	—	—	6
Balance at September 26, 2021 (1)	$ 6,523	$ 723	$ —	$ 7,246

(1) Cumulative goodwill impairments were $812 million at both September 26, 2021 and September 27, 2020.

The components of other intangible assets, net were as follows (in millions):

	September 26, 2021			September 27, 2020		
	Gross Carrying Amount	Accumulated Amortization	Weighted-average amortization period (years)	Gross Carrying Amount	Accumulated Amortization	Weighted-average amortization period (years)
Technology-based	$ 5,385	$ (3,971)	11	$ 5,556	$ (3,958)	11
Other	93	(49)	10	105	(50)	9
	$ 5,478	$ (4,020)	11	$ 5,661	$ (4,008)	11

All of these intangible assets are subject to amortization, other than acquired in-process research and development which had a carrying value of $247 million at September 26, 2021. At September 27, 2020, there was no in-process research and development. Amortization expense related to these intangible assets was $537 million, $621 million and $727 million for fiscal 2021, 2020 and 2019, respectively. Amortization expense related to these intangible assets and acquired in-process research and development, beginning upon the completion of the underlying projects, is expected to be $449 million, $340 million, $186 million, $153 million and $132 million for each of the five years from fiscal 2022 through 2026, respectively, and $198 million thereafter.

Equity Method and Non-marketable Equity Investments. The carrying values of our equity method and non-marketable equity investments are recorded in other assets and were as follows (in millions):

	September 26, 2021	September 27, 2020
Equity method investments	$ 214	$ 161
Non-marketable equity investments	1,051	821
	$ 1,265	$ 982

Other Current Liabilities (in millions)

	September 26, 2021	September 27, 2020
Customer incentives and other customer-related liabilities	$ 1,974	$ 1,721
Accrual for EC fines (Note 7)	1,522	1,487
Income taxes payable	862	549
Other	656	546
	$ 5,014	$ 4,303

Revenues. We disaggregate our revenues by segment (Note 8), by product and service (as presented on our consolidated statements of operations) and for our QCT segment by revenue stream, which is based on the industry and application in which our products are sold (as presented below). In certain cases, the determination of QCT revenues by industry and application requires the use of certain assumptions. Substantially all of QCT's revenues consist of equipment revenues that are recognized at a point in time, and substantially all of QTL's revenues represent licensing revenues that are recognized over time and are principally from royalties generated through our licensees' sales of mobile handsets. QCT revenue streams were as follows (in millions):

	2021	2020	2019
Handsets (1)	$ 16,830	$ 10,461	$ 9,793
RFFE (2)	4,158	2,362	1,478
Automotive (3)	975	644	640
IoT (internet of things) (4)	5,056	3,026	2,728
Total QCT revenues	$ 27,019	$ 16,493	$ 14,639

(1) Includes revenues from products sold for use in mobile handsets, excluding RFFE (radio frequency front-end) components.

(2) Includes all revenues from sales of 4G, 5G sub-6 and 5G millimeter wave RFFE products (a substantial portion of which are sold for use in mobile handsets) and excludes radio frequency transceiver components.

(3) Includes revenues from products sold for use in automobiles, including telematics, connectivity and digital cockpit.

(4) Primarily includes products sold for use in the following industries and applications: consumer (including computing, voice and music and XR), industrial (including handhelds, retail, transportation and logistics and utilities) and edge networking (including mobile broadband and wireless access points).

Revenue recognized from performance obligations satisfied (or partially satisfied) in previous periods were as follows (in millions):

	2021 (1)	2020 (2)	2019 (3)
Revenues recognized from previously satisfied performance obligations	$ 283	$ 1,480	$ 4,080

(1) Primarily related to certain QCT customer incentives, QTL revenues recognized related to devices sold in prior periods (including adjustments to prior period royalty estimates, which includes the impact of the reporting by our licensees of actual royalty due) and the release of a variable constraint against revenues not previously allocated to our segment results (Note 8).

(2) Primarily related to licensing revenues recognized in the fourth quarter of fiscal 2020 (a portion of which was attributable to fiscal 2020) resulting from the settlement with Huawei and, to a lesser extent, QTL royalties recognized related to devices sold in prior periods (including adjustments to prior period royalty estimates, which includes the impact of the reporting by our licensees of actual royalties due) and certain QCT customer incentives.

(3) Primarily related to licensing revenues recognized in the third quarter of fiscal 2019 (a portion of which was attributable to fiscal 2019) resulting from the settlement with Apple and its contract manufacturers in April 2019.

Unearned revenues (which are considered contract liabilities) consist primarily of license fees for intellectual property with continuing performance obligations. In fiscal 2021 and fiscal 2020, we recognized revenues of $557 million and $540 million, respectively, that were recorded as unearned revenues at September 27, 2020 and September 29, 2019, respectively.

Remaining performance obligations, substantially all of which are included in unearned revenues, represent the aggregate amount of the transaction price of certain customer contracts yet to be recognized as revenues as of the end of the reporting period and exclude revenues related to (a) contracts that have an original expected duration of one year or less and (b) sales-based royalties (i.e., future royalty revenues) pursuant to our license agreements. Our remaining performance obligations are primarily comprised of certain customer contracts for which QTL received license fees upfront. At September 26, 2021, we had $1.1 billion of remaining performance obligations, of which $653 million, $308 million, $84 million, $31 million and $2 million is expected to be recognized as revenues for each of the subsequent five years from fiscal 2022 through 2026, respectively, and no amounts expected thereafter.

Share-based Compensation Expense. Total share-based compensation expense, related to all of our share-based awards, was comprised as follows (in millions):

	2021	2020	2019
Cost of revenues	$ 47	$ 34	$ 35
Research and development	1,234	872	725
Selling, general and administrative	389	306	277
Share-based compensation expense before income taxes	1,670	1,212	1,037
Related income tax benefit	(435)	(238)	(184)
	$ 1,235	$ 974	$ 853

Other Income, Costs and Expenses. Other expenses in fiscal 2020 consisted of $28 million in gains related to a favorable legal settlement. Other expenses in fiscal 2019 consisted of a $275 million charge related to a fine imposed by the European Commission (EC) related to the Icera complaint (2019 EC fine) (Note 7) and $213 million in net charges related to our Cost Plan that concluded in fiscal 2019 (primarily related to certain asset impairment charges and also included a $52 million net gain from the sale of certain assets related to wireless electric vehicle charging applications and the sale of our mobile health nonreportable segment), partially offset by a $43 million gain due to the partial recovery of a fine imposed in 2009 resulting from our appeal of the Korea Fair Trade Commission (KFTC) decision and a $31 million gain related to a favorable legal settlement.

Investment and Other Income, Net (in millions)

	2021	2020	2019
Interest and dividend income	$ 83	$ 156	$ 300
Net gains on marketable securities	427	198	295
Net gains on other investments	470	108	68
Net gains on deferred compensation plan assets	130	47	9
Impairment losses on other investments	(33)	(405)	(135)
Net (losses) gains on derivative instruments	(14)	8	(14)
Equity in net earnings (losses) of investees	13	(21)	(93)
Net (losses) gains on foreign currency transactions	(32)	(25)	11
	$ 1,044	$ 66	$ 441

In fiscal 2020, the rapid, global spread of COVID-19 and associated containment and mitigation measures negatively impacted the condition of economies and financial markets globally, which negatively impacted certain companies in which we hold non-marketable equity investments, including those accounted for under the equity method and, to a lesser extent, non-marketable debt securities. As a result, certain of our investments were impaired and written down to their estimated fair values in fiscal 2020 (a significant portion of which related to the full impairment of our investment in OneWeb, who filed for bankruptcy in the second quarter of fiscal 2020).

Note 3. Income Taxes

The components of the income tax provision were as follows (in millions):

	2021	2020	2019
Current provision (benefit):			
Federal	$ 942	$ 210	$ 1,563
State	8	1	2
Foreign	518	526	(407)
	1,468	737	1,158
Deferred (benefit) provision:			
Federal	(251)	(192)	2,037
State	2	2	17
Foreign	12	(26)	(117)
	(237)	(216)	1,937
	$ 1,231	$ 521	$ 3,095

The foreign component of the income tax provision included foreign withholding taxes on royalty revenues included in U.S. earnings.

The components of income before income taxes by U.S. and foreign jurisdictions were as follows (in millions):

	2021	2020	2019
United States	$ 8,781	$ 5,004	$ 7,042
Foreign	1,493	715	439
	$ 10,274	$ 5,719	$ 7,481

The following is a reconciliation of the expected statutory federal income tax provision to our actual income tax provision (in millions, except percentages). Substantially all of our income is in the U.S., of which a significant portion qualifies for preferential treatment as FDII at a 13% effective tax rate.

	2021	2020	2019
Expected income tax provision at federal statutory tax rate	$ 2,158	$ 1,201	$ 1,571
Benefit from FDII deduction	(550)	(381)	(419)
Excess tax benefit associated with share-based awards	(265)	(83)	(27)
Benefit related to research and development tax credits	(195)	(125)	(110)
Derecognition of deferred tax asset on distributed intellectual property	—	—	2,472
Benefit from establishing new U.S. net deferred tax assets	—	—	(570)
Other	83	(91)	178
	$ 1,231	$ 521	$ 3,095
Effective tax rate	12 %	9 %	41 %

In fiscal 2019, several of our foreign subsidiaries made elections to be treated as U.S. branches for federal income tax purposes (commonly referred to as "check-the-box" elections) effective beginning in fiscal 2018 and 2019. As a result of making these check-the-box elections, we recorded a tax benefit of $570 million in the first quarter of fiscal 2019 due to establishing new U.S. net deferred tax assets resulting from the difference between the GAAP basis and the U.S. federal tax carryover basis of the existing assets and liabilities of those foreign subsidiaries, primarily related to customer incentive liabilities that have not been deducted for tax purposes. Additionally, during fiscal 2018, one of our foreign subsidiaries distributed certain intellectual property to a U.S. subsidiary resulting in a difference between the GAAP basis and the U.S. federal tax basis of the distributed intellectual property. Upon adoption of new accounting guidance in the first quarter of fiscal 2019, which changed the accounting for the income tax effects of intra-entity transfers of assets other than inventory, we recorded a deferred tax asset of approximately $2.6 billion primarily related to the distributed intellectual property, with an adjustment to opening retained earnings. During the third quarter of fiscal 2019, the United States Treasury Department issued new temporary regulations that resulted in a change to the deductibility of dividend income received by a U.S. stockholder from a foreign corporation. As a result of this change, pursuant to an agreement with the IRS, we relinquished the federal tax basis step-up of intellectual property that was distributed in fiscal 2018 by one of our foreign subsidiaries to a U.S. subsidiary. Therefore, the related deferred tax asset was derecognized, resulting in a $2.5 billion charge to income tax expense in fiscal 2019.

In fiscal 2019, as a result of certain court rulings in Korea, among other factors, we decided to apply for a partial refund claim for taxes previously withheld from licensees in Korea on payments due under their license agreements to which we have claimed a foreign tax credit in the United States. As a result, $1.9 billion and $1.6 billion was recorded as a noncurrent income taxes receivable (recorded in other assets) at September 26, 2021 and September 27, 2020, respectively, and $1.9 billion and $1.6 billion was recorded as a noncurrent liability for uncertain tax benefits (recorded in other liabilities) at September 26, 2021 and September 27, 2020, respectively.

At September 26, 2021, we estimated remaining future payments of $1.9 billion for a one-time repatriation tax accrued in fiscal 2018, after application of certain tax credits, which is payable in installments over the next five years. At September 26, 2021, $196 million was recorded in other current liabilities, reflecting the next installment due in January 2022.

We continue to assert that certain of our foreign earnings are not indefinitely reinvested. At September 26, 2021, we had not recorded a deferred tax liability of approximately $63 million related to foreign withholding taxes on approximately $761 million of undistributed earnings of certain subsidiaries that we continue to consider to be indefinitely reinvested outside the United States. Should we decide to no longer indefinitely reinvest such earnings outside the U.S., we would have to adjust the income tax provision in the period we make such determination.

We have tax incentives in Singapore that require we meet specified employment and other criteria. Although our profit in Singapore has declined as a result of our 2018 restructuring and such tax incentives were not significant for all periods presented, failure to meet these incentive requirements through March 2022 could require us to refund previously realized material tax benefits for 2017 and 2018.

We had deferred tax assets and deferred tax liabilities as follows (in millions):

	September 26, 2021	September 27, 2020
Unused tax credits	$ 1,504	$ 1,311
Customer incentives	762	537
Unused net operating losses	663	576
Accrued liabilities and reserves	483	275
Operating lease liabilities	188	107
Unearned revenues	181	262
Share-based compensation	175	151
Unrealized losses on other investments and marketable securities	106	235
Other	165	141
Total gross deferred tax assets	4,227	3,595
Valuation allowance	(1,926)	(1,728)
Total net deferred tax assets	2,301	1,867
Unrealized gains on other investments and marketable securities	(215)	(97)
Intangible assets	(198)	(181)
Operating lease assets	(174)	(100)
Property, plant and equipment	(111)	(162)
Other	(76)	(32)
Total deferred tax liabilities	(774)	(572)
Net deferred tax assets	$ 1,527	$ 1,295
Reported as:		
Non-current deferred tax assets	$ 1,591	$ 1,351
Non-current deferred tax liabilities (1)	(64)	(56)
	$ 1,527	$ 1,295

(1) Non-current deferred tax liabilities were included in other liabilities in the consolidated balance sheets.

At September 26, 2021, we had unused federal net operating loss carryforwards of $214 million, of which $150 million expire from 2022 through 2035 and $64 million may be carried forward indefinitely, unused state net operating loss carryforwards of $474 million expiring from 2022 through 2040 and unused foreign net operating loss carryforwards of $2.3 billion, of which substantially all may be carried forward indefinitely. At September 26, 2021, we had unused state tax credits of $1.3 billion, of which substantially all may be carried forward indefinitely, unused federal tax credits of $215 million expiring from 2026 through 2031 and unused tax credits of $51 million in foreign jurisdictions expiring from 2033 through 2041. We do not expect our federal net operating loss carryforwards to expire unused.

At September 26, 2021, we have provided a valuation allowance on certain state tax credits, foreign deferred tax assets and state net operating losses of $1.3 billion, $607 million and $13 million, respectively. The valuation allowance reflects the uncertainties surrounding our ability to generate sufficient future taxable income in certain foreign and state tax jurisdictions to utilize our net operating losses. We believe, more likely than not, that we will have sufficient taxable income after deductions related to share-based awards to utilize our remaining deferred tax assets.

A summary of the changes in the amount of unrecognized tax benefits for fiscal 2021, 2020 and 2019 follows (in millions):

	2021	2020	2019
Beginning balance of unrecognized tax benefits	$ 1,901	$ 1,705	$ 217
Additions based on prior year tax positions	56	20	1,238
Reductions for prior year tax positions and lapse in statute of limitations	(13)	(2)	(3)
Additions for current year tax positions	213	192	253
Settlements with taxing authorities	(21)	(14)	—
Ending balance of unrecognized tax benefits	$ 2,136	$ 1,901	$ 1,705

Of the $2.1 billion of unrecognized tax benefits, $1.9 billion has been recorded to other liabilities. We believe that it is reasonably possible that certain unrecognized tax benefits recorded at September 26, 2021 may result in a cash payment in fiscal 2022. Unrecognized tax benefits at September 26, 2021 included $146 million for tax positions that, if recognized, would impact the effective tax rate. The unrecognized tax benefits differ from the amount that would affect our effective tax rate primarily because the unrecognized tax benefits were included on a gross basis and did not reflect related receivables or secondary impacts, such as the federal deduction for state taxes, adjustments to deferred tax assets and the valuation allowance that might be required if our tax positions are sustained. The increase in unrecognized tax benefits for all periods presented was primarily due to expected refunds of Korean withholding tax previously paid (which had an insignificant impact to our income tax provision). If successful, the refund will result in a corresponding reduction in U.S. foreign tax credits. We believe that it is likely that the total amount of unrecognized tax benefits at September 26, 2021 will increase in fiscal 2022 as licensees in Korea continue to withhold taxes on future payments due under their licensing agreements at a rate higher than we believe is owed; such increase is not expected to have a significant impact on our income tax provision. At September 26, 2021, total interest and penalties related to unrecognized tax benefits accrued in other current liabilities and other liabilities was $184 million, with a corresponding noncurrent income taxes receivable of $107 million recorded in other assets for expected refunds of certain tax benefits.

We file income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. We are currently a participant in the IRS Compliance Assurance Process (CAP) Program, whereby we and the IRS endeavor to agree on the treatment of all tax issues prior to the tax return being filed. We are no longer subject to U.S. federal income tax examinations for years prior to fiscal 2018. We are also subject to examination in other taxing jurisdictions in the U.S. and numerous foreign jurisdictions. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds, many of which are open for periods after fiscal 2001. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. At September 26, 2021, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Cash amounts paid for income taxes, net of refunds received, were $1.5 billion, $830 million and $1.1 billion for fiscal 2021, 2020 and 2019, respectively.

Note 4. Capital Stock

Stock Repurchase Program. On July 26, 2018, we announced a stock repurchase program authorizing us to repurchase up to $30.0 billion of our common stock. On October 12, 2021, we announced a new $10.0 billion stock repurchase authorization, which is in addition to the remaining repurchase authority of $0.9 billion under the aforementioned program. The stock repurchase programs have no expiration date. Since September 26, 2021, we repurchased and retired 5.4 million shares of common stock for $703 million.

Shares Outstanding. Shares of common stock outstanding at September 26, 2021 were as follows (in millions):

	2021
Balance at beginning of period	1,131
Issued	18
Repurchased	(24)
Balance at end of period	1,125

Dividends. On October 13, 2021, we announced a cash dividend of $0.68 per share on our common stock, payable on December 16, 2021 to stockholders of record as of the close of business on December 2, 2021.

Note 5. Employee Benefit Plans

Equity Compensation Plans. On March 10, 2020, our stockholders approved the amended and restated Qualcomm Incorporated 2016 Long-Term Incentive Plan (the 2016 Plan), including an increase in the share reserve by 75 million shares. The 2016 Plan provides for the grant of RSUs and other stock-based awards. The Board of Directors may amend or terminate the 2016 Plan at any time. Certain amendments, including an increase in the share reserve, require stockholder approval. At September 26, 2021, approximately 71 million shares were available for future grant under the 2016 Plan.

RSUs are share awards that entitle the holder to receive shares of our common stock upon vesting. The RSUs generally include dividend-equivalent rights and vest over three years from the date of grant. A summary of RSU transactions under our 2016 Plan that contain only service requirements to vest follows:

	Number of Shares (in millions)	Weighted-Average Grant Date Fair Value
RSUs outstanding at September 27, 2020	32	$ 74.99
RSUs granted	16	124.22
RSUs assumed in acquisition	1	133.65
RSUs canceled/forfeited	(2)	97.81
RSUs vested	(18)	73.51
RSUs outstanding at September 26, 2021	29	102.83

The weighted-average estimated grant date fair values of employee RSUs under our 2016 Plan that contain only service requirements to vest granted during fiscal 2020 and 2019 were $82.57 and $63.10 per share, respectively. Upon vesting, we issue new shares of common stock. For the majority of RSUs, shares are issued on the vesting dates net of the amount of shares needed to satisfy statutory tax withholding requirements to be paid by us on behalf of the employees. As a result, the actual number of shares issued will be fewer than the number of RSUs outstanding. The annual pre-vest forfeiture rate for RSUs was estimated to be approximately 6%, 7% and 7% in fiscal 2021, 2020 and 2019, respectively.

At September 26, 2021, total unrecognized compensation expense related to such non-vested RSUs granted prior to that date was $2.0 billion, which is expected to be recognized over a weighted-average period of 1.7 years. The total vest-date fair value of such RSUs that vested during fiscal 2021, 2020 and 2019 was $2.6 billion, $1.3 billion and $977 million, respectively. The total shares withheld to satisfy statutory tax withholding requirements related to all share-based awards were 5 million in fiscal 2021 and 4 million in fiscal 2020 and 2019, and were based on the value of the awards on their vesting dates as determined by our closing stock price.

The total tax benefits realized, including the excess tax benefits, related to share-based awards during fiscal 2021, 2020 and 2019 were $567 million, $273 million and $237 million, respectively.

Employee Stock Purchase Plan. We have an employee stock purchase plan for eligible employees to purchase shares of common stock at 85% of the lower of the fair market value on the first or the last day of each offering period, which is generally six months. Employees may authorize us to withhold up to 15% of their compensation during any offering period, subject to certain limitations. The employee stock purchase plan includes a non-423(b) plan. The shares reserved for future issuance under the employee stock purchase plan were 25 million at September 26, 2021. During fiscal 2021, 2020 and 2019, 3 million, 5 million and 6 million shares, respectively, were issued under the plan at an average price of $107.48, $66.53 and $42.13 per share, respectively. At September 26, 2021, total unrecognized compensation expense related to non-vested purchase rights granted prior to that date was $35 million. We recorded cash received from the exercise of purchase rights of $343 million, $306 million and $257 million during fiscal 2021, 2020 and 2019, respectively.

Note 6. Debt

Long-term Debt. The following table provides a summary of our long-term debt and current portion of long-term debt:

	September 26, 2021			September 27, 2020		
	Maturities	**Amount (in millions)**	**Effective Rate**	**Maturities**	**Amount (in millions)**	**Effective Rate**
May 2015 Notes	2022 - 2045	$ 5,405	2.63% - 4.73%	2022 - 2045	$ 5,405	2.62% - 4.73%
May 2017 Notes	2023 - 2047	5,860	0.92% - 4.46%	2023 - 2047	5,860	1.06% - 4.46%
May 2020 Notes	2030 - 2050	2,000	2.31% - 3.30%	2030 - 2050	2,000	2.31% - 3.30%
August 2020 Notes	2028 - 2032	2,207	1.98% - 2.66%	2028 - 2032	2,207	1.96% - 2.65%
Total principal		15,472			15,472	
Unamortized discount, including debt issuance costs		(234)			(260)	
Hedge accounting adjustments		7			14	
Total long-term debt		$ 15,245			$ 15,226	
Reported as:						
Short-term debt		$ 1,544			$ —	
Long-term debt		13,701			15,226	
Total		$ 15,245			$ 15,226	

At September 26, 2021, future principal payments were $1.5 billion in fiscal 2022, $1.5 billion in fiscal 2023, $914 million in fiscal 2024, $1.4 billion in fiscal 2025 and $10.2 billion after fiscal 2026. At September 26, 2021, the aggregate fair value of the notes, based on Level 2 inputs, was approximately $17.0 billion.

At September 26, 2021, with the exception of $500 million of outstanding unsecured floating-rate notes due January 30, 2023, all of our outstanding long-term debt is comprised of unsecured fixed-rate notes. We may redeem the outstanding fixed-rate notes at any time in whole, or from time to time in part, at specified make-whole premiums as defined in the applicable form of note. We may not redeem the outstanding floating-rate notes prior to maturity. The obligations under the notes rank equally in right of payment with all of our other senior unsecured indebtedness and will effectively rank junior to all liabilities of our subsidiaries.

The effective interest rates for the notes include the interest on the notes, amortization of the discount, which includes debt issuance costs, and if applicable, adjustments related to hedging. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes. Cash interest paid related to our commercial paper program and long-term debt, net of cash received from the related interest rate swaps, was $477 million, $507 million and $563 million during fiscal 2021, 2020 and 2019, respectively.

Commercial Paper Program. We have an unsecured commercial paper program, which provides for the issuance of up to $4.5 billion. Net proceeds from this program are used for general corporate purposes. Maturities of commercial paper can range from 1 to up to 397 days. At September 26, 2021 and September 27, 2020, we had $500 million of outstanding commercial paper recorded as short-term debt with a weighted-average interest rate of 0.13% and 0.21%, respectively, which included fees paid to the commercial paper dealers. At September 26, 2021 and September 27, 2020, the weighted-average remaining days to maturity were 39 days and 37 days, respectively. The carrying value of the outstanding commercial paper approximated its estimated fair value at September 26, 2021.

Revolving Credit Facility. On December 8, 2020, we entered into a Revolving Credit Facility replacing our prior Amended and Restated Revolving Credit Facility. There were no outstanding borrowings under the Amended and Restated Revolving Credit Facility at the time of termination and September 27, 2020. The Revolving Credit Facility provides for unsecured revolving facility loans, swing line loans and letters of credit in an aggregate amount of up to $4.5 billion, which expires on December 8, 2025. At September 26, 2021, no amounts were outstanding under the Revolving Credit Facility.

Debt Covenants. The Revolving Credit Facility requires that we comply with certain covenants, including that we maintain an interest coverage ratio as defined in the agreement. We are not subject to any financial covenants under the notes nor any covenants that would prohibit us from incurring additional indebtedness ranking equal to the notes, paying dividends, issuing securities or repurchasing securities issued by us or our subsidiaries. At September 26, 2021, we were in compliance with the applicable covenants under the Revolving Credit Facility.

Note 7. Commitments and Contingencies

Legal and Regulatory Proceedings.

Consolidated Securities Class Action Lawsuit: On January 23, 2017 and January 26, 2017, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and certain of our current and former officers and directors. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 thereunder, by making false and misleading statements and omissions of material fact in connection with certain allegations that we are or were engaged in anticompetitive conduct. The complaints sought unspecified damages, interest, fees and costs. On May 4, 2017, the court consolidated the two actions. On July 3, 2017, the plaintiffs filed a consolidated amended complaint asserting the same basic theories of liability and requesting the same basic relief. On September 1, 2017, we filed a motion to dismiss the consolidated amended complaint, and on March 18, 2019, the court denied our motion. On January 15, 2020, we filed a motion for judgment on the pleadings. The court has not yet ruled on our motion. We believe the plaintiffs' claims are without merit.

In re Qualcomm/Broadcom Merger Securities Litigation: On June 8, 2018 and June 26, 2018, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and two of our then current officers. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 thereunder, by failing to disclose that we had submitted a notice to the Committee on Foreign Investment in the United States (CFIUS) in January 2018. The complaints sought unspecified damages, interest, fees and costs. On March 18, 2019, the plaintiffs filed a consolidated complaint asserting the same basic theories of liability and requesting the same basic relief. On May 10, 2019, we filed a motion to dismiss the consolidated complaint, and on March 10, 2020, the court granted our motion. On May 11, 2020, the plaintiffs filed a second amended complaint, and on October 8, 2020, the court granted our motion to dismiss the case with prejudice. On November 7, 2020, the plaintiffs filed a notice of appeal with the United States Court of Appeals for the Ninth Circuit (Ninth Circuit). A hearing on the appeal is scheduled for November 16, 2021. We believe the plaintiffs' claims are without merit.

Consumer Class Action Lawsuits: Since January 18, 2017, a number of consumer class action complaints have been filed against us in the United States District Courts for the Southern and Northern Districts of California, each on behalf of a putative class of purchasers of cellular phones and other cellular devices. In April 2017, the Judicial Panel on Multidistrict Litigation transferred the cases that had been filed in the Southern District of California to the Northern District of California. On July 11, 2017, the plaintiffs filed a consolidated amended complaint alleging that we violated California and federal antitrust and unfair competition laws by, among other things, refusing to license standard-essential patents to our competitors, conditioning the supply of certain of our baseband chipsets on the purchaser first agreeing to license our entire patent portfolio, entering into exclusive deals with companies, including Apple Inc., and charging unreasonably high royalties that do not comply with our commitments to standard setting organizations. The complaint seeks unspecified damages and disgorgement and/or restitution, as well as an order that we be enjoined from further unlawful conduct. On August 11, 2017, we filed a motion to dismiss the consolidated amended complaint. On November 10, 2017, the court denied our motion, except to the extent that certain claims seek damages under the Sherman Antitrust Act. On July 5, 2018, the plaintiffs filed a motion for class certification, and on September 27, 2018, the court granted that motion. On January 23, 2019, the Ninth Circuit granted us permission to appeal the court's class certification order, and on January 24, 2019, the court stayed the case pending our appeal. On December 2, 2019, a hearing on our appeal of the class certification order was held before the Ninth Circuit. On September 29, 2021, the Ninth Circuit vacated the district court's class certification order, ruling that the court had failed to correctly assess the propriety of applying California law to a nationwide class. The Ninth Circuit remanded the case to the district court and instructed the court to consider the effect of *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated* (which the Ninth Circuit decided in favor of Qualcomm in August 2020) on this case. We believe the plaintiffs' claims are without merit.

Since November 2017, several other consumer class action complaints have been filed against us in Canada (in the Ontario Superior Court of Justice, the Supreme Court of British Columbia and the Quebec Superior Court), Israel (in the Haifa District Court) and the United Kingdom (in the Competition Appeal Tribunal), each on behalf of a putative class of purchasers of cellular phones and other cellular devices, alleging violations of certain of those countries' competition and consumer protection laws. The claims in these complaints are similar to those in the U.S. consumer class action complaints. The complaints seek damages. We believe the plaintiffs' claims are without merit.

ParkerVision, Inc. v. QUALCOMM Incorporated: On May 1, 2014, ParkerVision filed a complaint against us in the United States District Court for the Middle District of Florida alleging that certain of our products infringed seven ParkerVision patents. On August 21, 2014, ParkerVision amended the complaint, alleging that we infringed 11

ParkerVision patents and sought damages and injunctive and other relief. ParkerVision has subsequently reduced the number of patents asserted to three. The asserted patents are now expired, and injunctive relief is no longer available. ParkerVision continues to seek damages related to the sale of many of our radio frequency (RF) products sold between 2008 and 2018. On March 26, 2021, the court issued an order stating that trial is extremely unlikely to occur before November or December 2021, if then. We believe that ParkerVision's claims are without merit.

Korea Fair Trade Commission (KFTC) Investigation (2015): On March 17, 2015, the KFTC notified us that it was conducting an investigation of us relating to the Korean Monopoly Regulation and Fair Trade Act (MRFTA). On December

27, 2016, the KFTC announced that it had reached a decision in the investigation, finding that we violated provisions of the MRFTA. On January 22, 2017, we received the KFTC's formal written decision, which found that the following conducts violate the MRFTA: (i) refusing to license, or imposing restrictions on licenses for, cellular communications standard-essential patents with competing modem chipset makers; (ii) conditioning the supply of modem chipsets to handset suppliers on their execution and performance of license agreements with us; and (iii) coercing agreement terms including portfolio license terms, royalty terms and free cross-grant terms in executing patent license agreements with handset makers. The KFTC's decision orders us to: (a) upon request by modem chipset companies, engage in good-faith negotiations for patent license agreements, without offering unjustifiable conditions, and if necessary submit to a determination of terms by an independent third party; (b) not demand that handset companies execute and perform under patent license agreements as a precondition for purchasing modem chipsets; (c) not demand unjustifiable conditions in our license agreements with handset companies and, upon request, renegotiate existing patent license agreements; and (d) notify modem chipset companies and handset companies of the decision and order imposed on us and report to the KFTC new or amended agreements. According to the KFTC's decision, the foregoing will apply to transactions between us and the following enterprises: (1) handset manufacturers headquartered in Korea and their affiliate companies; (2) enterprises that sell handsets in or to Korea and their affiliate companies; (3) enterprises that supply handsets to companies referred to in (2) above and the affiliate companies of such enterprises; (4) modem chipset manufacturers headquartered in Korea and their affiliate companies; and (5) enterprises that supply modem chipsets to companies referred to in (1), (2) or (3) above and the affiliate companies of such enterprises. The KFTC's decision also imposed a fine of 1.03 trillion Korean won (approximately $927 million), which we paid on March 30, 2017.

On February 21, 2017, we filed an action in the Seoul High Court to cancel the KFTC's decision. The Seoul High Court held hearings concluding on August 14, 2019 and, on December 4, 2019, announced its judgment affirming certain portions of the KFTC's decision and finding other portions of the KFTC's decision unlawful. The Seoul High Court cancelled the KFTC's remedial orders described in (c) above, and solely insofar as they correspond thereto, the Seoul High Court cancelled the KFTC's remedial orders described in (d) above. The Seoul High Court dismissed the remainder of our action to cancel the KFTC's decision. On December 19, 2019, we filed a notice of appeal to the Korea Supreme Court challenging those portions of the Seoul High Court decision that are not in our favor. The KFTC filed a notice of appeal to the Korea Supreme Court challenging the portions of the Seoul High Court decision that are not in its favor. Both we and the KFTC have filed briefs on the merits. The Korea Supreme Court has not yet ruled on our appeal or that of the KFTC. We believe that our business practices do not violate the MRFTA.

Korea Fair Trade Commission (KFTC) Investigation (2020): On June 8, 2020, the KFTC informed us that it was conducting an investigation of us relating to the MRFTA. The KFTC has not provided a formal notice on the scope of its investigation, but we believe it concerns our business practices in connection with our sale of radio frequency front-end (RFFE) components. We continue to cooperate with the KFTC as it conducts its investigation. If a violation is found, a broad range of remedies is potentially available to the KFTC, including imposing a fine (of up to 3% of our sales in the relevant markets during the alleged period of violation) and/or injunctive relief prohibiting or restricting certain business practices. It is difficult to predict the outcome of this matter or what remedies, if any, may be imposed by the KFTC. We believe that our business practices do not violate the MRFTA.

Icera Complaint to the European Commission (EC): On June 7, 2010, the EC notified and provided us with a redacted copy of a complaint filed with the EC by Icera, Inc. (subsequently acquired by Nvidia Corporation) alleging that we were engaged in anticompetitive activity. On July 16, 2015, the EC announced that it had initiated formal proceedings in this matter. On July 18, 2019, the EC issued a decision finding that between 2009 and 2011, we engaged in predatory pricing by selling certain baseband chipsets to two customers at prices below cost with the intention of hindering competition and imposed a fine of approximately 242 million euros. On October 1, 2019, we filed an appeal of the EC's decision with the General Court of the European Union. The court has not yet ruled on our appeal. We believe that our business practices do not violate the European Union (EU) competition rules.

In the third quarter of fiscal 2019, we recorded a charge of $275 million to other expenses related to this EC fine. We provided a financial guarantee in the first quarter of fiscal 2020 to satisfy the obligation in lieu of cash payment while we appeal the EC's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding. In the fourth quarter of fiscal 2019, we designated the liability as a hedge of our net investment in certain foreign subsidiaries, with gains and losses recorded in accumulated other comprehensive income as a component of the foreign currency translation adjustment. At September 26, 2021, the liability, including related foreign currency losses and accrued interest (which, to the extent they were not related to the net investment hedge, were recorded in investment and other income, net), was $292 million and included in other current liabilities.

European Commission (EC) Investigation: On October 15, 2014, the EC notified us that it was conducting an investigation of us relating to Articles 101 and/or 102 of the Treaty on the Functioning of the European Union (TFEU). On January 24, 2018, the EC issued a decision finding that pursuant to an agreement with Apple Inc. we paid significant amounts to Apple on the condition that it exclusively use our baseband chipsets in its smartphones and tablets, reducing Apple's incentives to source baseband chipsets from our competitors and harming competition and innovation for certain baseband chipsets, and imposed a fine of 997 million euros. On April 6, 2018, we filed an appeal of the EC's decision with the General Court of the European Union. From May 4, 2021 to May 6, 2021, a hearing on our appeal was held before the court. The court has not yet issued a ruling. We believe that our business practices do not violate the EU competition rules.

In the first quarter of fiscal 2018, we recorded a charge of $1.2 billion to other expenses related to this EC fine. We provided financial guarantees in the third quarter of fiscal 2018 to satisfy the obligation in lieu of cash payment while we appeal the EC's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding. In the first quarter of fiscal 2019, we designated the liability as a hedge of our net investment in certain foreign subsidiaries, with gains and losses recorded in accumulated other comprehensive income as a component of the foreign currency translation adjustment. At September 26, 2021, the liability, including related foreign currency gains and accrued interest (which, to the extent they were not related to the net investment hedge, were recorded in investment and other income, net), was $1.2 billion and included in other current liabilities.

Contingent Losses and Other Considerations: We will continue to vigorously defend ourselves in the foregoing matters. However, litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Other than with respect to the EC fines, we have not recorded any accrual at September 26, 2021 for contingent losses associated with these matters based on our belief that losses, while reasonably possible, are not probable. Further, any possible amount or range of loss cannot be reasonably estimated at this time. The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows. We are engaged in numerous other legal actions not described above arising in the ordinary course of our business (for example, proceedings relating to employment matters or the initiation or defense of proceedings relating to intellectual property rights) and, while there can be no assurance, we believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Indemnifications. We generally do not indemnify our customers, licensees and suppliers for losses sustained from infringement of third-party intellectual property rights. However, we are contingently liable under certain agreements to defend and/or indemnify certain customers, licensees and suppliers against certain types of liability and/or damages arising from the infringement of third-party intellectual property rights. Our obligations under these agreements may be limited in terms of time and/or amount, and in some instances, we may have recourse against third parties for certain payments made by us.

Claims and reimbursements under indemnification arrangements have not been material to our consolidated financial statements. We have not recorded accruals for certain claims under indemnification arrangements based on our belief that additional liabilities, while possible, are not probable. Further, any possible range of loss cannot be reasonably estimated at this time.

Purchase Obligations. We have agreements with suppliers and other parties to purchase inventory, other goods and services and long-lived assets. During fiscal 2021, we entered into several multi-year capacity purchase commitments with certain suppliers of our integrated circuit products. Integrated circuit product inventory obligations represent purchase commitments (including those under multi-year capacity purchase commitments to the extent such minimum amounts are both fixed and determinable) for raw materials, semiconductor die, finished goods and manufacturing services, such as wafer bump, probe, assembly and final test. Under our manufacturing relationships with our foundry suppliers and assembly and test service providers, cancellation of outstanding purchase commitments is generally allowed but may result in the payment of costs incurred through the date of cancellation, and in some cases, incremental fees and/or the loss of amounts paid in advance related to capacity underutilization and the failure to meet future minimum purchase volumes under multi-year capacity purchase commitments. Obligations under our purchase agreements, which primarily relate to integrated circuit product inventory obligations, at September 26, 2021 totaled $23.5 billion of which, $12.9 billion is expected to be paid in the next 12 months.

Operating Leases. We lease certain of our land, facilities and equipment under operating leases, with terms ranging from less than one year to 20 years, some of which include options to extend for up to 20 years. As of September 26, 2021 and September 27, 2020, the weighted-average remaining lease term for operating leases were 7 years and 6 years, respectively. Operating lease expense for fiscal 2021, 2020 and 2019 was $203 million, $181 million and $146 million, respectively. At September 26, 2021, other assets included $513 million of operating lease assets, with corresponding lease liabilities of $126 million recorded in other current liabilities and $428 million recorded in other liabilities. At September 27, 2020, other assets included $460 million of operating lease assets, with corresponding lease liabilities of $134 million recorded in other current liabilities and $371 million recorded in other liabilities.

At September 26, 2021, future lease payments under our operating leases were as follows (in millions):

	September 26, 2021
2022	$ 141
2023	102
2024	80
2025	55
2026	49
Thereafter	250
Total future lease payments	677
Imputed interest	(123)
Total lease liability balance	$ 554

Note 8. Segment Information

We are organized on the basis of products and services and have three reportable segments. Our operating segments reflect the way our businesses and management/reporting structure are organized internally and the way our Chief Operating Decision Maker (CODM), who is our CEO, reviews financial information, makes operating decisions and assesses business performance. We also consider, among other items, the way budgets and forecasts are prepared and reviewed and the basis on which executive compensation is determined, as well as the similarity of activities within our operating segments, such as the nature of products, the level of shared products, technology and other resources, production processes and customer base. We conduct business primarily through our QCT semiconductor business and our QTL licensing business. QCT develops and supplies integrated circuits and system software based on 3G/4G/5G and other technologies, including RFFE, for use in mobile devices, automotive systems for telematics, connectivity and digital cockpit and IoT including wireless networks, broadband gateway equipment, consumer electronic devices and industrial devices. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI reportable segment makes strategic investments. We also have nonreportable segments, including QGOV and our cloud AI inference processing initiative and other technology and service initiatives.

Our CODM allocates resources to and evaluates the performance of our segments based on revenues and earnings (loss) before income taxes (EBT). Segment EBT includes the allocation of certain corporate expenses to the segments, including depreciation and amortization expense related to unallocated corporate assets. Certain income and charges are not allocated to segments in our management reports because they are not considered in evaluating the segments' operating performance. Unallocated income and charges include certain interest expense, certain net investment income, certain share-based compensation, gains and losses on our deferred compensation plan liabilities and related assets and certain research and development expenses, certain selling, general and administrative expenses and other expenses or income that were deemed to be not directly related to the businesses of the segments. Additionally, unallocated charges include recognition of the step-up of inventories and property, plant and equipment to fair value, amortization of certain intangible assets and certain other acquisition-related charges, third-party acquisition and integration services costs and certain other items, which may include major restructuring and restructuring-related costs, goodwill and long-lived asset impairment charges and awards, settlements and/or damages arising from legal or regulatory matters. Our CODM does not evaluate our operating segments using discrete asset information.

The table below presents revenues and EBT for reportable segments (in millions):

	2021	2020	2019
Revenues			
QCT	$ 27,019	$ 16,493	$ 14,639
QTL	6,320	5,028	4,591
QSI	45	36	152
Reconciling items	182	1,974	4,891
Total	$ 33,566	$ 23,531	$ 24,273
EBT			
QCT	$ 7,763	$ 2,763	$ 2,143
QTL	4,627	3,442	2,954
QSI	916	(11)	344
Reconciling items	(3,032)	(475)	2,040
Total	$ 10,274	$ 5,719	$ 7,481

The net book value of long-lived tangible assets located outside of the U.S. was $2.9 billion and $2.3 billion at September 26, 2021 and September 27, 2020, respectively. The net book value of long-lived tangible assets located in the U.S. was $2.2 billion and $1.9 billion at September 26, 2021 and September 27, 2020, respectively.

We report revenues from external customers by country based on the location to which our products or services are delivered, which for QCT is generally the country in which our customers manufacture their products, and for licensing revenues, the invoiced addresses of our licensees. As a result, the revenues by country presented herein are not necessarily indicative of either the country in which the devices containing our products and/or intellectual property are ultimately sold to consumers or the country in which the companies that sell the devices are headquartered. For example, China revenues could include revenues related to shipments of integrated circuits for a company that is headquartered in South Korea but that manufactures devices in China, which devices are then sold to consumers in Europe and/or the United States. Revenues by country were as follows (in millions):

	2021	2020	2019
China (including Hong Kong)	$ 22,512	$ 14,001	$ 11,610
South Korea	2,368	2,964	2,400
United States	1,406	1,129	2,774
Ireland	1,160	867	2,957
Other foreign	6,120	4,570	4,532
	$ 33,566	$ 23,531	$ 24,273

Reconciling items for revenues and EBT in a previous table were as follows (in millions):

	2021	2020	2019
Revenues			
Nonreportable segments	$ 128	$ 133	$ 168
Unallocated revenues (Note 2)	54	1,841	4,723
	$ 182	$ 1,974	$ 4,891
EBT			
Unallocated revenues (Note 2)	$ 54	$ 1,841	$ 4,723
Unallocated cost of revenues	(277)	(340)	(430)
Unallocated research and development expenses	(1,820)	(1,046)	(989)
Unallocated selling, general and administrative expenses	(538)	(401)	(413)
Unallocated other income (expenses) (Note 2)	—	28	(414)
Unallocated interest expense	(559)	(599)	(619)
Unallocated investment and other income, net	166	105	243
Nonreportable segments	(58)	(63)	(61)
	$ (3,032)	$ (475)	$ 2,040

Certain revenues were not allocated to our segments in our management reports because they were not considered in evaluating segment results. Unallocated revenues in fiscal 2021 were comprised of the release of a variable constraint against revenues not previously allocated to our segment results. Unallocated revenues in fiscal 2020 were comprised of licensing revenues from Huawei resulting from the settlement agreement signed in July 2020 and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent license agreement signed in July 2020. Unallocated revenues in fiscal 2019 were comprised of licensing revenues resulting from the settlement with Apple and its contract manufacturers in April 2019.

Note 9. Acquisitions

On March 16, 2021 (the Closing Date), we completed the acquisition of NuVia, Inc. (NUVIA) for $1.1 billion (net of cash acquired), substantially all of which was paid in cash. In connection with the acquisition, we assumed or replaced unvested NUVIA stock awards with Qualcomm stock awards with an estimated fair value of $258 million, for which $10 million was attributable to pre-acquisition services and included in the purchase price, and the remaining amount is recognized as compensation expense over the related post-acquisition requisite service period of up to four years.

NUVIA has certain in-process technologies and is comprised of a CPU (central processing unit) and technology design team with expertise in high performance processors, SoC (system-on-chip) and power management for compute-intensive devices and applications. Upon completion of development, NUVIA's technologies are expected to be integrated into certain QCT products.

The allocation of the purchase price to the assets acquired and liabilities assumed based on their fair values was as follows (in millions):

Cash	$ 174
In-process research and development (IPR&D)	247
Goodwill	885
Other assets	26
Total assets	1,332
Liabilities	(68)
Net assets acquired	$ 1,264

Goodwill recognized in this transaction is not deductible for tax purposes and was allocated to our QCT segment for annual impairment testing purposes. Goodwill is primarily attributable to assembled workforce and certain revenue and cost synergies expected to arise after the acquisition. IPR&D is related to a single project, which is expected to be completed in fiscal 2023 and, upon completion, will be amortized over its useful life, which is expected to be seven years. The estimated fair value of the IPR&D asset acquired was determined using an income approach based on significant inputs that were not observable.

Our results of operations for fiscal 2021 included the operating results of NUVIA since the Closing Date, the amounts of which were not material. Pro forma results of operations have not been presented because the effects of this acquisition were not material to our consolidated results of operations.

Note 10. Fair Value Measurements

The following table presents our fair value hierarchy for assets and liabilities measured at fair value on a recurring basis at September 26, 2021 (in millions):

	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents	$ 4,303	$ 1,378	$ —	$ 5,681
Marketable securities:				
Corporate bonds and notes	—	4,459	—	4,459
Equity securities	682	—	—	682
Mortgage- and asset-backed securities	—	147	—	147
U.S. Treasury securities and government-related securities	—	10	—	10
Total marketable securities	682	4,616	—	5,298
Derivative instruments	—	42	—	42
Other investments	685	—	41	726
Total assets measured at fair value	$ 5,670	$ 6,036	$ 41	$ 11,747
Liabilities				
Derivative instruments	$ —	$ 111	$ —	$ 111
Other liabilities	685	—	—	685
Total liabilities measured at fair value	$ 685	$ 111	$ —	$ 796

Note 11. Marketable Securities

Our marketable securities were comprised as follows (in millions):

	Current		Noncurrent (1)	
	September 26, 2021	September 27, 2020	September 26, 2021	September 27, 2020
Available-for-sale debt securities:				
Corporate bonds and notes	$ 4,459	$ 4,049	$ —	$ —
Mortgage- and asset-backed and auction rate securities	147	66	—	35
U.S. Treasury securities and government-related securities	10	10	—	—
Total available-for-sale debt securities	4,616	4,125	—	35
Equity securities	682	352	—	—
Time deposit (2)	—	30	—	—
Total marketable securities	$ 5,298	$ 4,507	$ —	$ 35

(1) Noncurrent marketable securities were included in other assets.

(2) At September 27, 2020, marketable securities also included a time deposit with an original maturity of greater than 90 days.

The contractual maturities of available-for-sale debt securities were as follows (in millions):

	September 26, 2021
Years to Maturity:	
Less than one year	$ 1,241
One to five years	3,219
Five to ten years	9
No single maturity date	147
Total	$ 4,616

Debt securities with no single maturity date included mortgage- and asset-backed securities.

Note 12. Subsequent Events

In October 2021, we and SSW Partners, a New York-based investment partnership, entered into a definitive agreement (the Merger Agreement) to acquire Veoneer, Inc. (Veoneer) for $37.00 per share in cash, which values the estimated total cash consideration to be paid to Veoneer's shareholders, inclusive of amounts expected to be paid at closing for Veoneer's outstanding equity awards and convertible senior notes due 2024, at approximately $4.5 billion. At closing, SSW Partners will acquire all of the outstanding capital stock of Veoneer, shortly after which it will sell Veoneer's Arriver business to Qualcomm and retain Veoneer's Tier-1 automotive supplier businesses. Following close of the Arriver business sale, we intend to incorporate Arriver's computer vision, drive policy and driver assistance technologies into our Snapdragon automotive platform to deliver an open and competitive ADAS (advanced driver assistance systems) platform for automakers and Tier-1 automotive suppliers. The acquisition is subject to a number of conditions, including receipt of United States and other regulatory approvals and the approval of Veoneer's shareholders, and is not required to be completed by Qualcomm and SSW Partners prior to April 4, 2022. Subject to the satisfaction of these conditions, the acquisition is expected to close in 2022.

We will fund substantially all of the cash consideration that SSW Partners will pay to Veoneer's shareholders in exchange for (i) our right to acquire, and SSW Partners' obligation to sell to us, Veoneer's Arriver business and (ii) our right to receive a portion of the proceeds upon the sale of Veoneer's Tier-1 automotive supplier businesses by SSW Partners. In addition, we will provide a loan facility (or guarantee amounts provided by a third party) that provides financing to Veoneer to support the Arriver business, to the extent requested by Veoneer in the event that the acquisition has not closed, for the quarter commencing April 1, 2022 and each of the two subsequent quarters, of $120 million per quarter (up to $360 million in the aggregate), which amounts may be forgiven in certain circumstances in which the Merger Agreement is terminated. An additional $120 million for the first quarter of calendar 2023 may be provided under the loan facility if the final outside date, as defined in the Merger Agreement is extended to April 4, 2023.

In accordance with the Merger Agreement, we paid to Magna International Inc. (Magna) a termination fee of $110 million in October 2021 on behalf of Veoneer in connection with the termination of the previously announced agreement and plan of merger, dated as of July 22, 2021, by and among Magna and Veoneer.

SCHEDULE II
QUALCOMM Incorporated
VALUATION AND QUALIFYING ACCOUNTS

The table below details the activity of the valuation allowance on deferred tax assets for fiscal 2021, 2020 and 2019 (in millions):

	Balance at Beginning of Period	Charged to Costs and Expenses	Other	Balance at End of Period
Year ended September 26, 2021	$ 1,728	$ 197	$ 1	$ 1,926
Year ended September 27, 2020	1,672	60	(4)	1,728
Year ended September 29, 2019	1,529	143	—	1,672

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark one)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended September 27, 2020

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________ .

Commission File Number 0-19528

QUALCOMM Incorporated
(Exact name of registrant as specified in its charter)

Delaware	**95-3685934**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
5775 Morehouse Dr., San Diego, California	**92121-1714**
(Address of Principal Executive Offices)	**(Zip Code)**

(858) 587-1121
(Registrant's telephone number, including area code)

Securities registered pursuant to section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common stock, $0.0001 par value	QCOM	NASDAQ Stock Market

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer	☐	Sm repo com

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of
the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C.
7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant at March 27, 2020 (the last business day of the registrant's most recently completed second fiscal quarter) was $74.9

billion, based upon the closing price of the registrant's common stock on that date as reported on the NASDAQ Global Select Market.

The number of shares outstanding of the registrant's common stock was 1,131 million at November 2, 2020.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Definitive Proxy Statement in connection with the registrant's 2021 Annual Meeting of Stockholders, to be filed with the Commission subsequent to the date hereof pursuant to Regulation 14A, are incorporated by reference into Part III of this Report.

QUALCOMM Incorporated
Form 10-K
For the Fiscal Year Ended September 27, 2020
Index

TRADEMARKS

Qualcomm, Snapdragon, MSM, Hexagon and Adreno are trademarks or registered trademarks of Qualcomm Incorporated.

Other products and brand names may be trademarks or registered trademarks of their respective owners.

In this Annual Report, the words “Qualcomm,” “we,” “our,” “ours” and “us” refer only to QUALCOMM Incorporated and its subsidiaries and not any other person or entity. This Annual Report (including but not limited to the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations”) contains forward-looking statements. Words such as “expects,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” “estimates,” “may,” “will,” “would” and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report. Additionally, statements concerning future matters such as our future business, prospects, results of operations, financial condition or research and development or technology investments; new or enhanced products, services or technologies; emerging industries or business models; design wins or product launches; industry, market or technology trends, dynamics or transitions, such as the transition to 5G; potential impacts of the COVID-19 pandemic, legal or regulatory matters, U.S./China trade or national security tensions, vertical integration by our customers or competition; and other statements regarding matters that are not historical are also forward-looking statements.

Although forward-looking statements in this Annual Report reflect our good faith judgment, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks and uncertainties and actual results and outcomes may differ materially from the results and outcomes discussed in or anticipated by the forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include without limitation those discussed under “Part I, Item 1A. Risk Factors” below, as well as those discussed elsewhere in this Annual Report. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report. Readers are urged to carefully review and consider the various disclosures made in this Annual Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

PART I

Item 1. Business

We incorporated in California in 1985 and reincorporated in Delaware in 1991. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. Our 52-week fiscal years consist of four equal fiscal quarters of 13 weeks each, and our 53-week fiscal years consist of three 13-week fiscal quarters and one 14-week fiscal quarter. The financial results for our 53-week fiscal years and our 14-week fiscal quarters will not be exactly comparable to our 52-week fiscal years and our 13-week fiscal quarters. The fiscal years ended September 27, 2020 and September 29, 2019 included 52 weeks. The fiscal year ended September 30, 2018 included 53 weeks.

Overview

We are a global leader in the development and commercialization of foundational technologies for the wireless industry. Our technologies and products are used in mobile devices and other wireless products, including network equipment, broadband gateway equipment, consumer electronic devices and other connected devices. Our inventions have helped power the growth in smartphones, which have connected billions of people. We are a leader in 3G (third generation), 4G (fourth generation) and 5G (fifth generation) wireless technologies. Our technologies and products are also used in industry segments or applications beyond mobile, including automotive and internet of things (IoT) (which includes connectivity and networking, computing and fixed wireless broadband), among others. We derive revenues principally from sales of integrated circuit products and licensing of our intellectual property, including patents and other rights.

The foundational technologies we invent help power the modern mobile experience, impacting how the world connects, computes and communicates. We share these inventions broadly through our licensing program, enabling wide ecosystem access to technologies at the core of mobile innovation, and through the sale of our wireless integrated circuit platforms (also known as chips or chipsets) and other products. We collaborate across the ecosystem, including manufacturers, operators, developers, system integrators, cloud providers, governments and industry standards organizations, to enable a global environment to drive continued progress and growth.

We have a long history of driving innovation. We have played and continue to play a leading role in developing system level inventions that serve as the foundation for 3G, 4G and 5G wireless technologies. This includes the CDMA (Code Division Multiple Access) and OFDMA (Orthogonal Frequency Division Multiple Access) families of technologies, with the latter encompassing LTE (Long Term Evolution) and 5G NR (New Radio), which, along with TDMA (Time Division Multiple Access), are the primary digital technologies currently used to transmit voice or data over radio waves using a public or private cellular wireless network.

We own significant intellectual property, including patents, patent applications and trade secrets, applicable to products that implement any version of CDMA and/or OFDMA technologies. Companies in the mobile industry generally recognize that any company seeking to develop, manufacture and/or sell devices or infrastructure equipment that use CDMA-based and/or OFDMA-based technologies will require a license or other rights to use our patents. We also develop and commercialize numerous other key technologies used in mobile and other wireless devices, and we own substantial intellectual property related to these technologies. Some of these inventions are contributed to and commercialized as industry standards, such as certain video and audio codecs, Wi-Fi, GPS (Global Positioning System) and Bluetooth. We have also developed other technologies that are used by wireless devices that are not related to industry standards, such as operating systems, user interfaces, graphics and camera processing functionality, RF (radio frequency), RFFE (radio frequency front-end) and antenna designs, artificial intelligence (AI) and machine learning techniques and application processor architectures. Our patents cover a wide range of technologies across the entire wireless system (including wireless devices and network infrastructure equipment), not just the portion of such patented technologies incorporated into chipsets.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on 3G/4G/5G and other technologies for use in mobile devices, wireless networks, broadband gateway equipment, consumer electronic devices, other devices used in IoT and automotive systems for telematics and infotainment. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including Qualcomm Government Technologies or QGOV, our cloud AI inference processing initiative and other technology and service initiatives.

Industry Trends

As the largest technology platform in the world, mobile has transformed the way we connect, compute and communicate. The scale and pace of innovation in the mobile industry, especially around connectivity and computing technologies, is also impacting industries beyond wireless, empowering new services, new business models and new experiences. Our inventions and licensing program have been integral to, and provided foundational technologies for, the evolution of the mobile industry.

Advancing connectivity. 3G and 4G mobile broadband technologies have been key innovations of mobile, providing users with fast, reliable, always-on connectivity. As of September 30, 2020, there were approximately 6.2 billion 3G/4G connections globally, representing 78% of total mobile connections (GSMA Intelligence, November 2020). By 2024, global 3G/4G connections are projected to reach 6.5 billion, with approximately 89% of these connections in emerging regions and China (GSMA Intelligence, November 2020).

3G networks, first launched in the early 2000s, ushered in the mobile broadband era, serving as a true alternative to traditional desktop internet service, allowing users to experience the internet from virtually anywhere. The combination of faster processing and larger screens with mobile broadband connectivity has transformed how people interact with information and with each other. The launch of 4G in 2010 brought true mobile broadband connectivity to wireless networks. With its faster data rates and greater capacity, 4G has become the foundational technology to many of the applications and services used today, including e-commerce, video streaming, video calling, social media and gaming. 3G and 4G mobile broadband technologies have also helped to strengthen economic and social development globally by providing access to government and healthcare resources and creating new educational and entrepreneurial opportunities.

With the first 5G global specifications defined in 2018 by 3GPP (3rd Generation Partnership Project), an industry standards development organization, initial commercial 5G network deployments and device launches, which focus on enhanced mobile broadband services, began in 2019 and will continue into 2021 and beyond. As of September 30, 2020, more than 110 operators have deployed 5G commercial networks in nearly 50 countries and territories, and over 400 operators are investing in 5G (GSA, October 2020). Calendar year 2020 5G global smartphone shipments are expected to reach more than 200 million units (IDC, Mobile Phone Tracker, 2020Q2). With support for multi-gigabit data rates, low latency and greater capacity, 5G enhances mobile broadband services, including ultra-high definition (4K) video streaming and sharing, near-instantaneous access to cloud services, multi-player cloud gaming and AR/VR/XR (augmented reality/virtual reality/extended reality) applications. 5G also brings more capacity and efficiency to cellular networks, which may enable operators to reduce their operating costs and offer new unlimited mobile data plans.

The second 5G global specifications defined in 2020 by 3GPP (Release 16) and future releases of 5G are expected to expand the reach of the technology to industries beyond mobile to create new services, business models and experiences, such as automated driving built on the concepts of computer vision, sensor fusion and vehicle-to-vehicle communications. We believe 5G will also enable artificial intelligence-based platforms designed to bring greater autonomy and wireless connectivity to factory automation for more reconfigurable manufacturing and other industrial applications (known as industrial IoT) through ultra-reliable, ultra-low latency communication links. We also expect 5G to connect a significant number of “things” (also known as IoT), including among others, consumer, enterprise, retail, wearable and voice and music devices, with connectivity designed to meet diverse (low) power and cost requirements, as well as to address both low- and high-complexity applications.

Most 5G devices include multimode support for 3G, 4G and Wi-Fi, enabling service continuity where 5G has yet to be deployed and simultaneous connectivity across 4G technology, while also allowing mobile operators to utilize current network deployments. At the same time, 4G is expected to continue to evolve in parallel with the further development of 5G and become fundamental to many of the key 5G technologies (through multi-connectivity), such as 5G massive IoT leveraging LTE IoT, support for unlicensed spectrum and gigabit LTE user data speeds. The first phase of 5G networks predominantly supports mobile broadband services for smartphones, both in lower spectrum bands below 7 GHz (commonly referred to as sub-6, sub-7 or Frequency Range 1) and in higher bands above 24 GHz (commonly referred to as millimeter wave (mmWave) or Frequency Range 2). As with previous generations of mobile networks, it will take time to deploy new

5G networks; however, we expect that deployment of 5G networks will be at a faster pace as compared to the transition from 3G to 4G technologies.

Consumer demand in smartphones. From October 2019 through September 2020, approximately 1.2 billion smartphones are estimated to have shipped globally, representing a year-over-year decrease of approximately 9% primarily driven by the global spread of the coronavirus (COVID-19) pandemic, which negatively impacted consumer demand for smartphones and replacement rates (IDC, Mobile Phone Tracker, 2020Q2). Smartphone shipments in calendar 2021 are expected to increase by approximately 9% year-over-year (IDC Quarterly Mobile Phone Tracker, 2020Q2), reflecting a gradual recovery in demand for smartphones and replacement rates from the negative effects of the COVID-19 pandemic. Looking beyond 2021, we expect replacement rates to moderately lengthen when compared to pre-COVID-19 levels, particularly in developed regions and China, as consumer demand is increasingly driven by new product launches and/or innovation cycles. Consumer demand for new types of experiences, combined with the needs of mobile operators and device manufacturers to provide differentiated features and services, is driving continued innovation within the smartphone industry, across connectivity, processing, AI, multimedia, imaging, audio and more. As a result, the smartphone continues to be the go-to device for social networking, music and video streaming, gaming, email and web browsing, among others. It is expected that the evolution of 5G will fuel further innovation within the smartphone industry to support more intuitive and immersive experiences.

Transforming other industries. With their significant scale and highly integrated solutions, industries beyond mobile, including automotive and IoT, among others, are leveraging the same technology innovations found in today's leading smartphones to enhance existing products and services as well as to create new products and services. Our inventions that contribute to the formation of advanced cellular technologies, such as 3G, 4G and now 5G connectivity, are helping to drive, and in the case of 5G accelerate the pace of, this transformation. For example, in the automotive industry, approximately 70% of new vehicles produced in 2025 are projected to have cellular connectivity, compared to 48% in 2019 (Strategy Analytics, October 2020). In addition, the installed base of non-mobile devices with cellular connectivity, which includes IoT devices among others, is projected to grow 190% between 2020 and 2024 (ABI Research, October 2020).

Wireless Technologies Overview

The demand in the use of wireless devices worldwide and the demand for data services and applications requires continuous innovation to improve the user experience, support new services, increase network capacity, make use of different frequency bands and allow for dense network deployments. To meet these requirements, different wireless communications technologies continue to evolve. We have a long history of heavily investing in research and development and have developed foundational technologies that drive the continued evolution of the wireless industry, including CDMA and OFDMA. As a result, we have developed and acquired (and continue to develop and acquire) significant related intellectual property. This intellectual property has been incorporated into the most widely accepted and deployed cellular wireless communications technology standards, and we have licensed it to several hundred licensees, including leading wireless device and infrastructure manufacturers.

Cellular wireless technologies. Relevant cellular wireless technologies can be grouped into the following categories.

TDMA-based. TDMA-based technologies are characterized by their access method allowing several users to share the same frequency channel by dividing the signal into different time slots. Most of these systems are classified as 2G technology. The main example of TDMA-based technologies is GSM (Global System for Mobile Communications).

The transition of wireless devices from 2G to 3G/4G and the deployment of 5G technologies continued around the world with estimated 3G/4G/5G connections up 7% year-over-year (GSMA Intelligence, November 2020). As of September 30, 2020, there were approximately 1.6 billion GSM connections worldwide, representing approximately 20% of total cellular connections, down from 25% as of September 30, 2019 (GSMA Intelligence, November 2020).

CDMA-based. CDMA-based technologies are characterized by their access method allowing several users to share the same frequency and time by allocating different orthogonal codes to individual users. Most of the CDMA-based technologies are classified as 3G technology.

There are a number of variants of CDMA-based technologies deployed around the world, in particular CDMA2000, EV-DO (Evolution Data Optimized), WCDMA (Wideband CDMA) and TD-SCDMA (Time Division-Synchronous CDMA) (deployed exclusively in China). CDMA-based technologies provide vastly improved capacity for voice and low-rate data services as compared to analog technologies and significant improvements over 2G technology.

As of September 30, 2020, there were approximately 1.9 billion CDMA-based connections worldwide, representing approximately 24% of total cellular connections, down from 26% as of September 30, 2019 as consumers migrate to OFDMA-based technologies (GSMA Intelligence, November 2020).

OFDMA-based. OFDMA-based technologies are characterized by their access method allowing several users to share the same frequency band and time by allocating different subcarriers to individual users. Most of the OFDMA-based technologies deployed prior to 2020 are classified as 4G technology. 5G heavily leverages OFDMA-based technologies. 3GPP developed 4G specifications through the standardization of the radio component (LTE) and the core network component (Enhanced Packet Core or EPC). Similarly, 3GPP has developed 5G specifications through the specification of the radio component (NR) and the core network component (5G Core or 5GC). Unlike 4G that has fixed Orthogonal Frequency Division Multiplexing (OFDM) parameterization, 5G has multiple OFDM parameterizations to address a wide range of spectrum and use cases. We continue to play a significant role in the further development of LTE-based technologies, such as Narrowband IoT (NB-IoT), enhanced Machine Type Communications (eMTC) and Enhanced TV broadcast (EnTV), in addition to the core LTE operation evolution, such as enhancements for mobility and massive multiple-input multiple-output (MIMO) operation.

LTE is incorporated in 3GPP specifications beginning with Release 8 and uses OFDMA in the downlink and single carrier FDMA (Frequency Division Multiple Access) in the uplink. LTE has two modes, FDD (Frequency Division Duplex) and TDD (Time Division Duplex), to support paired and unpaired spectrum, respectively, and continues to evolve as 3GPP defines new specifications. The principal benefit of LTE is its ability to leverage a wide range of spectrum (bandwidths of up to 20 MHz or more through aggregation). LTE is designed to seamlessly interwork with 3G technologies through multimode devices.

LTE Advanced brings many more enhancements, including carrier aggregation, advanced multi-antenna techniques and optimizations for small cells. Apart from improving the performance of existing networks, there are also enhancements under the umbrella of LTE Advanced Pro, including LTE Direct for proximity-based device-to-device discovery, improved LTE broadcast, optimizations of narrowband communications designed for IoT (known as eMTC and NB-IoT) and the ability to use LTE Advanced in unlicensed spectrum (LTE Unlicensed), as well as in shared spectrum bands in various regions (such as the Citizens Broadband Radio Service, or CBRS, in the United States). There are multiple options for deploying LTE Unlicensed for different deployment scenarios.

- LAA (Licensed Assisted Access), introduced as part of 3GPP Release 13, aggregates unlicensed and licensed spectrum in the downlink and is being deployed globally by mobile operators. LAA is a key technology for many operators with limited licensed spectrum to deliver Gigabit LTE speeds.
- eLAA (enhanced LAA), introduced as part of 3GPP Release 14, is an evolution of LAA. eLAA enables aggregation of unlicensed and licensed spectrum in the uplink.

Beginning with Release 14, 3GPP specifications provide enhancements specifically for vehicular communications known as cellular vehicle-to-everything (C-V2X), which includes both direct communication (vehicle-to-vehicle, vehicle-to-infrastructure and vehicle-to-pedestrian) in dedicated spectrum that is independent of a cellular network and cellular communications with networks in traditional mobile broadband licensed spectrum. C-V2X is designed to serve as the foundation for Intelligent Transportation Systems (ITS), enabling vehicles to communicate with each other and everything around them, providing non-line-of-sight awareness for enhanced road safety and traffic efficiency. 3GPP Release 16, which was completed in July 2020, incorporates 5G features for C-V2X, such as higher throughput, lower latency and increased reliability capabilities to enable a higher level of performance and predictability required for automated driving and other advanced safety use cases.

As of September 30, 2020, there were approximately 4.3 billion global LTE connections worldwide, representing approximately 55% of total cellular connections, up from 49% as of September 30, 2019 (GSMA Intelligence, November 2020).

The wireless industry is actively developing and commercializing 5G technologies. Initial commercial 5G network deployments and device launches began in calendar 2019 and continued throughout 2020. We expect that 5G network deployments and device launches will increase over the next several years. Many of our inventions at the core of 3G and 4G serve as foundational technologies for 5G. 5G is designed to transform the role of wireless technologies and already incorporates or soon will incorporate advancements on 3G/4G features available today, including device-to-device capabilities and the use of all different types of spectrum (including licensed, unlicensed and shared spectrum). We continue to play a significant role in driving advancements in 5G, including contributing to 3GPP standardization activities that are defining the continued evolution of 5G NR and 5GC standards.

The first global set of 5G standards is incorporated in 3GPP specifications starting from Release 15, which was initially completed in March 2018. Release 15 enables different architecture deployment choices of 5G networks while sharing the same radio access technology. This is due to 5G's ability to target diverse services with very different technical requirements (from enhanced mobile broadband to massive IoT to mission critical services), its utilization of diverse types of spectrum (from the low bands to mmWave bands) and its ability to support diverse types of deployment scenarios. Predominant technological components of 5G include the ability to address ultra-reliable, low-latency communication, new channel coding schemes to efficiently support large data blocks, MIMO to increase coverage and network capacity and mobile mmWave to increase the data rate offered to users. 5G uses OFDMA in the downlink and either OFDMA or single carrier FDMA in the uplink depending on the use case. Like 3G and 4G, 5G supports carrier aggregation across spectrum bands, across FDD and TDD and across licensed and unlicensed spectrum (starting with Release 16), and 5G also supports dual connectivity across 4G and 5G. A key benefit of 5G is its ability to take advantage of very wide channel bandwidth such as 400/100 MHz (compared to LTE's 20 MHz maximum bandwidth, which requires carrier aggregation to combine spectrum beyond 20 MHz). As with previous cellular generations, 5G is designed to support seamless compatibility with 2G/3G/4G technologies through multimode devices.

5G is the first generation of cellular wireless communication systems to use transmissions at mmWave bands, which creates certain challenges including coverage limitations and blockages, heightened costs and power constraints. In order to address these challenges, we have been a leader in designing RFFE modules and RF filter products that use adaptive beamforming (which spatially concentrates radio energy in a given beam direction to extend the range) and that enable the efficient tracking and switching of beams in accordance with varying radio conditions. mmWave deployments rely on small cells (low-powered cellular base stations typically used for increased system capacity and which may have already incorporated Gigabit LTE) to allow for faster, more reliable mobile service with transmissions at mmWave bands.

Release 16 not only introduced enhancements to 5G mobile broadband experiences (e.g., more capacity, improved coverage, mobility and better device power efficiency), but also expanded 5G technologies into new use cases and industries. For example, to better enable new industrial IoT use cases, such as factory automation and other mission critical applications, Release 16 added support for private 5G networks, efficient wireless Ethernet over 5G, 5G Time-Sensitive Networking (TSN) and further enhanced ultra-reliable low latency communications. Release 16 also fulfilled the 5G vision of supporting different spectrum types by expanding 5G into unlicensed spectrum with 5G NR Unlicensed (NR-U). Release 16 NR-U focused on sub-7GHz operation, specifically 5GHz and 6GHz bands, and Release 17 will expand NR-U to support higher bands such as 60 GHz. High-precision positioning was another focus area in Release 16. Accurate device positioning is a key enabler for many applications, such as public safety and indoor navigation. Release 16 added new capabilities for 5G positioning, supporting techniques such as multi-cell roundtrip time, angle of arrival/departure and time difference of arrival. Release 16 addressed the growing needs of low-power, wide-area IoT use cases by allowing in-band deployments of NB-IoT and eMTC in 5G carriers, as well as supporting these low-complexity IoT technologies with the new 5G core network. Additionally, to make mmWave densification more cost efficient, Release 16 introduced integrated access and backhaul that allows a base station to provide both wireless access for devices and wireless backhaul connectivity, thereby eliminating the need for a wired backhaul.

Other (non-cellular) wireless technologies. There are other, non-cellular wireless technologies that have also been broadly adopted.

Wireless Local Area Networks. Wireless Local Area Networks (WLAN), such as Wi-Fi, link two or more nearby devices wirelessly and usually provide connectivity through an access point. We are actively involved in innovative programs developed in the context of the Wi-Fi Alliance, a non-profit organization that drives global Wi-Fi adoption and evolution. Wi-Fi systems are based primarily on standards developed by the Institute of Electrical and Electronics Engineers 802.11 Working Group. Amendments of the 802.11 standard are commonly referred to by the names made popular by the Wi-Fi Alliance (for example, 802.11ax is known as Wi-Fi 6). Wi-Fi 6, a recent amendment to 802.11, adds advanced features such as downlink and uplink OFDMA and uplink multiple-user MIMO. This technology primarily targets connectivity for mobile devices, tablets, laptops and other consumer electronic devices using the 2.4 GHz and 5 GHz spectrums. Up to 1200MHz of new spectrum has been added in the 6GHz band in the United States, which triples the available spectrum for Wi-Fi, which can be used by new Wi-Fi 6 extended devices. For 60GHz mmWave technology, 802.11ay adds wider channel bandwidth and the use of MIMO to the existing 802.11ad (also known as Gigabit Wi-Fi or WiGig) standard. 802.11ah targets sub-1 GHz spectrum. We played a leading role in the development of 802.11ac, 802.11ax, 802.11ay, 802.11ah and 802.11ad, and continue to play a lead role in the evolution of the 802.11 family of standards with the development of the new 802.11be standard, which is expected to be known as Wi-Fi 7.

Bluetooth. Bluetooth is a wireless personal area network that provides wireless connectivity between devices over short distances ranging from a few centimeters to approximately one hundred meters. Bluetooth technology provides wireless connectivity to a wide range of fixed or mobile consumer electronic devices. Bluetooth functionalities are standardized by the Bluetooth Special Interest Group in various versions of the specification (from 1.0 to 5.2), which include different functionalities, such as enhanced data rate, low energy and mesh technologies. We are a leading contributor to Bluetooth technologies in the areas of mobile devices, audio and mesh technologies.

Location Positioning Technologies. Location positioning technologies continue to evolve in order to deliver an enhanced commercial location experience and comply with new mandates on location for E911 (enhanced 911) calls. We are a key developer of the Assisted-GPS (A-GPS), Assisted Global Navigation Satellite System (A-GNSS) and WLAN positioning technologies used in most cellular handsets today. For uses requiring the best reliability and accuracy for E911 services and navigational based services, A-GPS, A-GNSS and WLAN provide leading-edge solutions. In 3GPP Release 16, we led the standardization of many 4G and 5G-based positioning capabilities.

The industry continues to evolve to support additional inputs for improving the location experience. Our products and intellectual property now support multiple constellations for A-GNSS, including: GPS, GLONASS, Galileo, NavIC and BeiDou; Wi-Fi-based and Bluetooth-based positioning for WLAN, including Wi-Fi RSSI (received signal strength indication) and Wi-Fi RTT (round-trip time) signals for indoor location; observed time difference of arrival positioning for LTE access (e.g., in rural and indoor areas); and third-party inertial sensors. The combination of these different location solutions is used to ensure accurate location availability in all areas.

Other Significant Technologies used in Cellular and Certain Consumer Electronic Devices and Networks. We have played and continue to play a leading role in developing and/or have acquired many of the other technologies used across the wireless system, including in cellular handsets and certain other consumer electronic devices and networks, such as:

- on-device AI features, including machine learning platforms and the application of AI and machine learning techniques to edge computing and other use cases;
- graphics and display processing functionality;
- video coding based on the HEVC (High Efficiency Video Codec) standard, which is being deployed to support 4K video and immersive media content and the next generation VVC (Versatile Video Codec) standard, which is designed to power the creation and consumption of rich digital media experiences;
- audio coding, including EVS (enhanced voice services) and MPEG-H 3D Audio;
- the latest version of 3GPP's codec for multimedia use and for voice/speech use;
- multimedia transport, including MPEG-DASH (Dynamic Adaptive Streaming over HTTP) enabling advanced multimedia experiences;
- camera and camcorder functions;
- operating system and user interface features;
- AR/VR/XR features enabling new types of user experiences;
- security and content protection systems for enhanced device security without compromising the user experience and ultrasonic fingerprint readers for single touch authentication;
- volatile (LP-DDR4, 5) and non-volatile (eMMC) memory and related controllers;
- fast charging features, enabling devices to charge quickly, safely and efficiently;
- power management systems for improved battery life and device charging; and
- System on Chip (SoC) architecture, low-power computing and other optimization techniques.

Operating Segments

We have three reportable segments. We conduct business primarily through QCT and QTL, while QSI makes strategic investments. Revenues in fiscal 2020, 2019 and 2018 for our reportable segments were as follows (in millions, except percentages):

	2020	2019	2018
QCT	$ 16,493	$ 14,639	$ 17,282
As a percent of total	70 %	60 %	76 %
QTL	$ 5,028	$ 4,591	$ 5,042
As a percent of total	21 %	19 %	22 %
QSI	$ 36	$ 152	$ 100
As a percent of total	— %	1 %	— %

QCT Segment. QCT is a leading developer and supplier of integrated circuits and system software based on 3G/4G/5G and other technologies for use in wireless voice and data communications, networking, application processing, multimedia and global positioning system products. QCT's integrated circuit products are sold and its system software is licensed to manufacturers that use our products in a broad range of devices, from low-tier, entry-level devices primarily for emerging regions to premium-tier devices, including mobile devices (primarily smartphones), tablets, laptops, data modules, handheld wireless computers and gaming devices, other consumer electronics, other IoT devices and applications, automotive systems for telematics and infotainment, access points and routers, broadband gateway equipment, data cards and infrastructure equipment and sensor hubs. Our 3G/4G/5G modem roadmap delivers the latest network technologies across multiple product tiers and devices. This roadmap is the result of extensive collaboration with manufacturers, operators, developers, systems integrators, cloud providers, governments and industry standards organizations, as well as our years of research into emerging network standards and the development of integrated circuits that take advantage of these new standards, while maintaining backward compatibility with existing standards.

The Qualcomm® Snapdragon™ family of highly-integrated, system-based solutions include the Snapdragon mobile, compute and automotive platforms. Each platform consists of application processors and wireless connectivity capabilities, including our cellular modem that provides core baseband modem functionality for voice and data communications, non-cellular wireless connectivity (such as Wi-Fi and Bluetooth) and global positioning functions. Our Snapdragon application processor functions include security, graphics, display, audio, video, camera and AI. Our central processing units are designed based on ARM architecture and are designed to deliver high levels of compute performance with optimized power consumption. Our Qualcomm® Hexagon™ processors are designed to support a variety of signal processing applications, including AI, audio and sensor processing. Our Qualcomm® Adreno™ graphics processing units are designed to deliver high quality graphics performance for visually rich 3D gaming and user interfaces. In addition to the highly integrated core system-on-chip (SoC), we also design and supply supporting components, including the RF, PM (power management), audio, codecs, speaker amps and additional wireless connectivity integrated circuits. These supporting components, in addition to our cellular modems and application processors comprising our core SoC, are also sold as individual components. The combination of the Snapdragon SoC, system software and supporting components provide an overall platform with optimized performance and efficiency, enabling manufacturers to design and deliver powerful, slim and power-efficient devices ready for integration with the complex cellular networks worldwide. We have also integrated our Snapdragon platform with our RFFE components to create our Snapdragon 5G modem-RF systems, the world's first commercial modem-to-antenna 5G solution designed to maximize data speeds and performance, support superior call connectivity and coverage, and extend battery life on mobile devices.

Our portfolio of RF products includes Qualcomm® RFFE components that are designed to simplify the RF design for 5G front-end, LTE multimode and multiband mobile devices, including sub-6 GHz and mmWave devices, to reduce power consumption and to improve radio performance. QCT offers an advanced portfolio of RFFE products primarily for mobile devices, in addition to broadband gateway equipment, infrastructure equipment, laptops, automotive, industrial IoT and other IoT applications. Our technologies provide comprehensive RFFE product offerings with system level performance from the modem and transceiver to the antenna that include complex 4G/5G transmit and receive modules, power tracking, tuning systems, filtering, multimode-multiband power amplification, low noise amplifiers and mmWave antenna solutions, in addition to discrete filtering products across mobile, automotive, industrial IoT and other IoT industries.

Our wireless connectivity products also consist of integrated circuits and system software for Wi-Fi, Bluetooth and frequency modulation (FM), as well as technologies that support location data and services, including GPS, GLONASS, Galileo, NavIC and BeiDou. Our wireless connectivity products provide additional connectivity for mobile devices, tablets, laptops, other consumer electronics, other IoT applications and automotive telematics and infotainment systems. QCT also offers standalone Wi-Fi, Bluetooth, fingerprint sensor, applications processor and Ethernet products for mobile devices, consumer electronics, computers, other IoT applications, other connected devices and automotive telematics and infotainment systems. Our networking products include Wi-Fi, Ethernet and Powerline chips, network processors and software. These products help enable home and business networks to support the growing number of connected devices, digital media and data services.

Other than for our RFFE modules and RF filter products, QCT utilizes a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Therefore, we primarily rely on third-parties to perform the manufacturing and assembly, and most of the testing, of our integrated circuits based primarily on our proprietary designs and test programs. Our suppliers also are responsible for the procurement of most of the raw materials used in the production of our integrated circuits. Integrated circuits are die cut from silicon wafers that have completed the package assembly and test manufacturing processes. The semiconductor package supports the electrical contacts that connect the integrated circuit to a circuit board. Die cut from silicon wafers are the essential components of all of our integrated circuits and a significant portion of the total integrated circuit cost. We employ both turnkey and two-stage manufacturing models to purchase our integrated circuits. Under the turnkey model, our foundry suppliers are responsible for delivering fully assembled and tested integrated circuits. Under the two-stage manufacturing model, we purchase die in singular or wafer form from semiconductor manufacturing foundries and contract with separate third-parties for manufacturing services such as wafer bump, probe, assembly and the majority of our final test requirements. The primary foundry suppliers for our various digital, analog/mixed-signal, RF and PM integrated circuits are Global Foundries, Samsung Electronics, Semiconductor Manufacturing International Corporation (SMIC), Taiwan Semiconductor Manufacturing Company (TSMC) and United Microelectronics. The primary semiconductor assembly and test suppliers are Advanced Semiconductor Engineering, Amkor Technology, Siliconware Precision Industries and STATSChipPAC. The majority of our foundry and semiconductor assembly and test suppliers are located in the Asia-Pacific region.

QCT primarily uses internal fabrication facilities to manufacture RFFE modules and RF filter products, and its manufacturing operations consist of front-end and back-end processes. The front-end processes primarily take place at manufacturing facilities located in Germany and Singapore and involve the imprinting of substrate wafers with the structure and circuitry required for the products to function (also known as wafer fabrication). The back-end processes include the assembly, packaging and test of RFFE modules and RF filter products and their preparation for distribution. The back-end manufacturing facilities are located in China and Singapore.

QCT's sales are primarily made through standard purchase orders for delivery of products. QCT generally allows customers to reschedule delivery dates within a defined time frame and to cancel orders prior to shipment with or without payment of a penalty, depending on when the order is canceled. The industry in which QCT operates is intensely competitive. QCT competes worldwide with a number of U.S. and international designers and manufacturers of semiconductors. As a result of global expansion by foreign and domestic competitors, technological changes, lengthening replacement cycles for mobile devices, device manufacturer concentrations and the potential for further industry consolidation, we anticipate the industry to remain very competitive. We believe that the principal competitive factors for our products include performance, level of integration, quality, compliance with industry standards, price, time-to-market, system cost, design and engineering capabilities, new product innovation, growth and scaling of distribution channels, desire by certain customers to use multiple suppliers and customer support. QCT also competes in both single-mode and multimode environments against alternative communications technologies. Additional competitive factors exist for QCT product offerings that have expanded into adjacent industry segments or applications beyond mobile, including automotive and IoT. The automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in a significant barrier to entry and may result in increased costs.

QCT's current competitors include, but are not limited to, companies such as Broadcom, HiSilicon, MediaTek, Nvidia, NXP Semiconductors, Qorvo, Samsung, Skyworks, Texas Instruments and UNISOC (formally known as Spreadtrum Communications). QCT also faces competition from products internally developed by our customers, including some of our largest customers, and from some early-stage companies. Our competitors devote significant amounts of their financial, technical and other resources to develop and market competitive products and, in some cases, to develop and adopt competitive digital communication or signal processing technologies, and those efforts may materially and adversely affect us. Although we have attained a significant position in the wireless industry, many of our current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to use our competitors' integrated circuit products, to utilize their own internally-developed integrated circuit products, or sell such products to others, or to utilize alternative technologies; lower cost structures or a willingness and ability to accept lower prices or lower margins for their products, particularly in China; foreign government support of other technologies, competitors or OEMs that sell devices that do not contain our integrated circuit products; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and OEMs in certain geographic regions (such as China); more experience in adjacent industry segments or applications beyond mobile (such as automotive and IoT); and a more established presence in certain regions.

QTL Segment. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale and/or use of certain wireless products, including, without limitation, products implementing CDMA2000, WCDMA, CDMA TDD, LTE and/or OFDMA-based 5G standards and their derivatives. We grant licenses or otherwise provide rights to use our cellular standard-essential patents (including 3G, 4G and 5G) for both single-mode and multimode devices on a worldwide basis, and our standard practice in China is to offer our cellular standard-essential Chinese patents (for 3G, 4G and, now, 5G) for devices sold for use in China separately from our other patents. We also offer licenses to our cellular standard-essential patents together with other Qualcomm patents that may be useful to such licensed products for licensees that desire to obtain the commercial benefits of receiving such broad patent rights from us. Since 2018, an increasing number of new and existing licensees have elected to enter into worldwide license agreements covering only our cellular standard-essential patents. Going forward, we continue to anticipate that a significant portion of QTL's licensing revenues will be derived from licensees that have entered into license agreements covering only Qualcomm's cellular standard-essential patents. Our licensees manufacture wireless products including mobile devices (including handsets), other consumer devices (e.g., tablets and laptops), plug-in end user data modem cards and embedded modules for incorporation into machine-to-machine devices and certain end user products (excluding handsets and tablets), as well as infrastructure equipment required to establish and operate a network and equipment to test networks and cellular devices.

Since our founding in 1985, we have focused heavily on technology development and innovation. These efforts have resulted in a leading intellectual property portfolio related to foundational, system level technologies for the wireless industry. We have an extensive portfolio of United States and foreign patents, and we continue to pursue patent applications around the world. Our patents have broad coverage in many countries, including Brazil, China, India, Japan, South Korea, Taiwan, the United States and countries in Europe. A substantial portion of our patents and patent applications relate to digital wireless communications technologies, including patents that are essential or may be important to the commercial implementation of CDMA2000, WCDMA (UMTS), TD-SCDMA, TD-CDMA (Time Division CDMA), OFDMA-based LTE and OFDMA-based 5G products. Our patent portfolio is the most widely and extensively licensed in the industry, with more than 300 licensees. Additionally, we have a substantial patent portfolio related to key technologies used in communications and other devices and/or related services, some of which were developed in industry standards development bodies. These include certain video codecs, audio codecs, Wi-Fi, memory interfaces, wireless power, GPS and positioning, broadcast and streaming protocols, and short-range communication functionalities, including NFC and Bluetooth. Our patents cover a wide range of technologies across the entire wireless system, including the device (handsets and other wireless devices), not just the portion of such patented technologies incorporated into chipsets, and the network. Over the years, a number of companies have challenged our patent position, but companies in the mobile communications industry generally recognize that any company seeking to develop, manufacture and/or sell certain wireless products that use CDMA-based and/or OFDMA-based technologies will require a license or other rights to use our patents.

We have licensed or otherwise provided rights to use our patents to hundreds of companies on industry-accepted terms. Unlike some other companies in our industry that hold back certain key technologies, we offer companies substantially our entire patent portfolio for use in cellular devices and cell site infrastructure equipment. Our strategy to make our patented technologies broadly available has been a catalyst for industry growth, helping to enable a wide range of companies offering a broad array of wireless products and features while increasing the capabilities of and/or driving down average and low-end selling prices for 3G and 3G/4G multimode handsets and other wireless devices. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, encouraging innovative applications, supporting equipment manufacturers with integrated chipset and software products and focusing on improving the efficiency of the airlink for wireless operators, we have helped 3G and 3G/4G multimode evolve and grow and reduce device pricing. 5G network deployments and commercial 3G/4G/5G multimode device sales began in 2019 and continued throughout 2020. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, 5G will continue to encourage innovative applications through enhanced mobile broadband services with lower latency and multi-gigabit user data speeds and bring more capacity and efficiency to wireless networks.

Upon the initial deployment of OFDMA-based networks, the products implementing such technologies generally have been multimode and implement OFDMA-based and CDMA-based technologies. The licenses granted under our existing license agreements generally cover multimode CDMA/OFDMA (3G/4G/5G) devices, and our licensees are obligated to pay royalties under their license agreements for such devices.

Standards bodies have been informed that we hold: patents that might be essential for all 3G standards that are based on CDMA; patents and pending patent applications that are potentially essential for LTE standards, including FDD and TDD versions; and patents and pending patent applications that are potentially essential for 5G technologies. We have committed to such standards bodies that we will offer to license our essential patents for these standards consistent with our commitments to those bodies. We have made similar commitments with respect to certain other technologies implemented in industry standards.

QTL licensing revenues include royalties and, to a lesser extent, license fees. Licensees pay quarterly royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets, laptops and smartwatches, and provide for a maximum royalty amount payable per device. Revenues generated from royalties are subject to quarterly and annual fluctuations.

The vast majority of QTL revenues have been generated through our licensees' sales of CDMA2000-based, WCDMA-based and OFDMA-based products (including 3G, 3G/4G and 3G/4G/5G multimode devices), such as smartphones and feature phones. We have invested and continue to invest in both the acquisition and development of OFDMA technology and intellectual property and have generated the industry leading patent portfolio applicable to LTE, LTE Advanced, LTE Advanced Pro and 5G-NR. Some of our inventions that serve as foundational technologies for 3G and 4G also serve as foundational technologies for 5G. We have invested and continue to invest in the development of 5G and continue to play a significant role in driving advancements of 5G. Nevertheless, we face competition in the development of intellectual property for future generations of digital wireless communications technologies and services.

Separate and apart from licensing manufacturers of wireless devices and network equipment, we have entered into certain arrangements with competitors of our QCT segment. A principal purpose of these arrangements is to provide our QCT segment and the counterparties certain freedom of operation with respect to each party's integrated circuits business. In every case, these agreements expressly reserve the right for QTL to seek royalties from the customers of such integrated circuit suppliers with respect to such suppliers' customers' sales of CDMA-, WCDMA- and OFDMA-based wireless devices into which such suppliers' integrated circuits are incorporated.

Our license agreements also may provide us with rights to use certain of our licensees' technology and intellectual property to manufacture, sell and/or use certain components (e.g., application-specific integrated circuits) and related software, cellular devices and/or infrastructure equipment.

We are currently subject to certain governmental investigations and private legal proceedings challenging our patent licensing practices, including those described in this Annual Report under the heading "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies," which may require us to change our patent licensing practices as described more fully herein in "Part I, Item 1A. Risk Factors" under the heading "*Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations.*"

QSI Segment. QSI makes strategic investments primarily through our Qualcomm Ventures arm that are focused on expanding or opening new opportunities for our technologies as well as supporting the design and introduction of new products and services (or enhancing existing products or services). Many of these strategic investments are in early-stage companies in a variety of industries and applications, including, but not limited to, artificial intelligence, automotive, digital healthcare, enterprise, IoT, mobile and networking. Investments primarily include non-marketable equity securities and to a lesser extent, marketable equity securities (the majority of which resulted from initial public offerings of certain non-marketable equity investments) and convertible debt instruments. In addition, QSI segment results include revenues and related costs associated with development contracts with one of our investees (OneWeb). As part of our strategic investment activities, we intend to pursue various exit strategies for each of our QSI investments in the foreseeable future.

Other Businesses. Nonreportable segments include our Qualcomm Government Technologies or QGOV business, our cloud AI inference processing initiative and other technology and service initiatives. QGOV provides development and other services and sells related products to U.S. government agencies and their contractors. Additional information regarding our operating segments is provided in this Annual Report in "Notes to Consolidated

Financial Statements, Note 8. Segment Information.” Information regarding seasonality is provided in this Annual Report in “Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the “Our Business and Operating Segments” section under the heading “Seasonality.”

Corporate Structure

We operate our businesses through our parent company, QUALCOMM Incorporated, and multiple direct and indirect subsidiaries. We have developed our corporate structure in order to address various legal, regulatory, tax, contractual compliance, operational and other matters. Substantially all of our products and services businesses, including QCT, and substantially all of our engineering, research and development functions, are operated by Qualcomm Technologies, Inc. (QTI), a wholly-owned subsidiary of QUALCOMM Incorporated, and QTI's subsidiaries. QTL is operated by QUALCOMM Incorporated, which owns the vast majority of our patent portfolio. Neither QTI nor any of its subsidiaries has any right, power or authority to grant any licenses or other rights under or to any patents owned by QUALCOMM Incorporated.

Revenue Concentrations and Significant Customers

A small number of customers/licensees historically have accounted for a significant portion of our consolidated revenues. In fiscal 2020, 2019 and 2018, revenues from Apple and its contract manufacturers, combined revenues from Guangdong OPPO Mobile Telecommunications Corp., Ltd. (Oppo) and BBK Communication Technology Co., Ltd. (vivo), and their respective affiliates (including BBK), Samsung and Xiaomi each comprised 10% or more of consolidated revenues. Revenues from Huawei also comprised 10% or more of consolidated revenues in fiscal 2020, which were positively impacted by the settlement of our prior dispute. Revenues in fiscal 2018 were negatively impacted by our prior dispute with Apple and its contract manufacturers. Additional information regarding the settlements is provided in this Annual Report in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations."

Research and Development

The wireless communications industry is characterized by rapid technological change, evolving industry standards, frequent new product introductions and, with the introduction of 5G, the expansion into new industry segments or applications such as automotive and IoT, requiring a continuous effort to enhance existing products and technologies and to develop new products and technologies. We have significant engineering resources, including engineers with substantial expertise in CDMA, OFDMA and a broad range of other technologies. Using these engineering resources, we expect to continue to invest in research and development in a variety of ways in an effort to extend the demand for our products, and to utilize that research and development in adjacent industry segments or applications beyond mobile (such as automotive and IoT), including continuing the development of CDMA, OFDMA and other technologies (such as RFFE), developing alternative technologies for certain specialized applications, participating in the formulation of new voice and data communication standards and technologies, and assisting in deploying digital voice and data communications networks around the world. Our research and development team has a demonstrated track record of innovation in voice and data communication technologies and application processor technology, among others.

We continue to invest significant resources towards advancements in OFDMA-based technologies and products (including LTE and 5G). We also engage in acquisitions and other transactions, such as joint ventures, to meet certain technology needs, to obtain development resources or open or expand opportunities for our technologies and to support the design and introduction of new products and services (or enhancing existing products and services) for voice and data communications and new industry segments or applications beyond mobile. We make investments to provide our integrated circuit customers with chipsets designed on leading-edge technology nodes that combine multiple technologies for use in consumer electronic devices (e.g., smartphones, tablets, laptops, AR/VR/XR devices) and other products (e.g., access points and routers, data cards and infrastructure equipment). In addition to 3G, 4G and 5G technologies, our chipsets support other wireless and wired connectivity technologies, including Wi-Fi, Bluetooth, Ethernet, location positioning and Powerline communication. Our integrated chipsets often include multiple technologies, including advanced multimode modems, application processors and graphics engines, as well as the tools to connect these diverse technologies. We continue to support Android, Windows and other client software environments in our chipsets.

We develop on our own, and with our partners, innovations that are integrated into our product portfolio to further expand the opportunity for wireless communications and enhance the value of our products and services. These innovations are expected to enable our customers to improve the performance or value of their existing services, offer these services more affordably and introduce revenue-generating broadband data services ahead of their competition.

We have research and development centers in various locations throughout the world that support our global development activities and ongoing efforts to develop and/or advance 4G, 5G and a broad range of other technologies. We continue to use our substantial engineering resources and expertise to develop new technologies, applications and services and make them available to licensees to help grow the communications industry and generate new or expanded licensing opportunities.

Sales and Marketing

Sales and marketing activities of our operating segments are discussed under Operating Segments. Other marketing activities include public relations, branding, digital marketing and social media, technical marketing, product marketing, participation in technical conferences and trade shows, development of use cases and white papers, competitive analyses and industry intelligence and other marketing programs, such as co-marketing with our customers or licensees. Our Corporate Marketing department provides information on our company website and through other channels regarding our products, strategies and technology to investors, industry analysts, media, prospective job applicants, consumers and others.

Competition

Competition faced by our operating segments is discussed under Operating Segments. Competition in the wireless communications industry throughout the world continues to increase at a rapid pace as consumers, businesses and governments realize the potential of wireless communications products and services.

We expect competition to increase as our current competitors expand their product offerings and introduce new technologies and services in the future and as additional companies compete with our products and/or services based on 3G, 4G, 5G and/or other technologies. Although we intend to continue to make substantial investments in developing new products and technologies and improving existing products and technologies to strengthen and/or maintain our competitive position, our competitors may introduce alternative products, services or technologies that threaten our business. It is also possible that the prices we charge for our products and services may continue to decline as competition continues to intensify. See also the Risk Factor entitled "*Our industry is subject to intense competition in an environment of rapid technological change. Our success depends in part on our ability to adapt to such change and compete effectively; and such change and competition could result in decreased demand for our products and technologies or declining average selling prices for our products or those of our customers or licensees.*"

Environmental, Social and Governance (ESG) and Human Capital

For decades, our innovations have helped transform industries, enhance the lives of billions of people and address some of society's biggest challenges. With the world becoming increasingly connected, we have a tremendous opportunity to shape a better future. We believe in the power of technology. As such, our corporate responsibility vision is to be a facilitator of innovation for a sustainable world, connected wirelessly.

ESG

Our sustained investment in R&D has helped revolutionize the way people connect; our approach to innovation is strategic and purposeful. We understand that the success of our business is fundamentally connected to the well-being of our world. We focus our efforts in four key areas where we believe we can have the biggest impact:

- ***Responsible Business.*** We integrate responsible and sustainable practices throughout our organization. Our products are designed to not harm individuals, communities or the environment. We continually look for ways to conserve water, minimize energy consumption, lower emissions and reduce waste. Because privacy and security are critical for success in the wireless industry, we constantly seek to promote data protection across the mobile ecosystem.
- ***Our People.*** We strive to make Qualcomm an inspiring and inclusive workplace to advance the development of leading-edge technologies. Our success is only possible with the hard work and dedication of our employees. We celebrate diversity among our workforce and recognize that our varied backgrounds, experiences and ideas are critical to innovation. We foster inclusive practices in our operations around the world in order to reflect the communities in which we do business.
- ***Purposeful Innovation.*** We invent breakthrough technologies that enable life-changing products and experiences. We're building on our legacy of technology leadership with 5G, which we believe will serve as the technological foundation for connected cars, industrial IoT, smart homes and cities, networking and mobility. We also work to broaden our impact by bringing advanced wireless technologies to underserved communities around the world. In doing so, we believe that we have enriched the lives of millions of people while creating new opportunities for our business.
- ***STEM Education.*** We seek to inspire the next generation of inventors and advance workforce development for STEM-related careers (science, technology, engineering and mathematics). Our initiatives are designed to promote and improve STEM education at all levels and to expand opportunities for underrepresented students.

We encourage you to review our March 2020 Corporate Responsibility Report (located on our Internet site at www.qualcomm.com) for more detailed information regarding our ESG programs and initiatives. Nothing on our website, including our Corporate Responsibility Report or sections thereof, shall be deemed incorporated by reference into this Annual Report.

Human Capital

In order to continue to produce the innovative, breakthrough technologies for which we are known, it is crucial that we continue to attract and retain top talent. To facilitate talent attraction and retention, we strive to make Qualcomm a diverse, inclusive and safe workplace, with opportunities for our employees to grow and develop in their careers, supported by strong compensation, benefits and health and wellness programs, and by programs that build connections between our employees and their communities.

At September 27, 2020, we had approximately 41,000 full-time, part-time and temporary employees, the overwhelming majority of which were full-time employees. During fiscal 2020, the number of employees increased by approximately 4,000, primarily due to increases in engineering resources. Our employees are represented by more than 100 self-identified nationalities working in over 150 locations in 32 different countries around the world. Collectively, we speak more than 60 different languages. Our global workforce is highly educated, with the substantial majority of our employees working in engineering or technical roles (many of whom help develop foundational technologies for both our QCT semiconductor business and our QTL licensing business). During fiscal 2020, our voluntary turnover rate was less than 5%, below the technology industry benchmark, which is comprised of certain of our key competitors (Aon, 2020 Salary Increase and Turnover Study — Second Edition, September 2020).

Diversity and Inclusion. We believe that a diverse workforce is critical to our success, and we continue to focus on the hiring, retention and advancement of women and underrepresented populations. Our recent efforts have been focused in three areas: inspiring innovation through an inclusive and diverse culture; expanding our efforts to recruit and hire world-class diverse talent; and identifying strategic partners to accelerate our inclusion and diversity programs.

We have a number of employee networks that enhance our inclusive and diverse culture, including those supporting Women, Africans and African Americans, Latinos, Veterans, the LGBTQ+ community and employees with disabilities.

We continue to recruit technical talent in diverse communities, including by engaging as a high-level sponsor of professional conferences, such as the Grace Hopper Celebration, the Society of Hispanic Professional Engineers National Convention and the National Society of Black Engineers National Convention. We also continue to recruit from a variety of colleges including Hispanic-Serving Institutions, Historically Black Colleges and Universities and Women's Colleges.

Our continued engagement with organizations that work with diverse communities has been vital to our efforts to increase women and minority representation in our workforce. For example, we partner with AnitaB.org to benchmark our progress and identify promising practices for recruiting, retaining and advancing women technologists and support its research initiatives related to attracting and retaining women and underrepresented minority students in computing majors. We, alongside other top technology companies, helped form the Reboot Representation Tech Coalition, which aims to double the number of Black, Latinx and Native American women receiving computing degrees by 2025. In collaboration with the National Foundation for Autism Research, we started an internship program to welcome those with autism into our Company. Through our collaboration with Disability:IN's Inclusion Works program, we have increased our ability to address the needs of individuals with disabilities.

In an effort to provide additional transparency into our efforts to increase underrepresented populations in our workforce, we intend to disclose our 2020 Consolidated EEO-1 Report after our submission of the report to the U.S. Equal Employment Opportunity Commission.

From a governance perspective, our HR and Compensation Committee, through its charter, provides oversight of our policies, programs and initiatives focusing on workforce diversity and inclusion.

Health, Safety and Wellness. The success of our business is fundamentally connected to the well-being of our people. Accordingly, we are committed to the health, safety and wellness of our employees. We provide our employees and their families with access to a variety of innovative, flexible and convenient health and wellness programs, including benefits that provide protection and security so they can have peace of mind concerning events that may require time away from work or that impact their financial well-being; that support their physical and mental health by providing tools and resources to help them improve or maintain their health status and encourage engagement in healthy behaviors; and that offer choice where possible so they can customize their benefits to meet their needs and the needs of their families. In response to the COVID-19 pandemic, we implemented significant changes that we determined were in the best interest of our employees, as well as the communities in which we operate, and which comply with government regulations. This includes having the vast majority of our employees work from home, while implementing additional safety measures for employees continuing critical on-site work.

Compensation and Benefits. We provide robust compensation and benefits programs to help meet the needs of our employees. In addition to salaries, these programs (which vary by country/region) include annual bonuses, stock awards, an Employee Stock Purchase Plan, a 401(k) Plan, healthcare and insurance benefits, health savings and flexible spending accounts, paid time off, family leave, family care resources, flexible work schedules, adoption and surrogacy assistance, employee assistance programs, tuition assistance and on-site services, such as health centers and fitness centers, among many others. In addition to our broad-based equity award programs, we have used targeted equity-based grants with vesting conditions to facilitate retention of personnel, particularly those with critical engineering skills and experience.

Talent Development. We invest significant resources to develop the talent needed to remain a world-leading wireless innovator. We deliver numerous training opportunities, provide rotational assignment opportunities, have expanded our focus on continuous learning and development, and implemented "industry-leading" methodologies to manage performance, provide feedback and develop talent.

Our talent development programs provide employees with the resources they need to help achieve their career goals, build management skills and lead their organizations. We provide a series of employee workshops around the globe that support professional growth and development. Additionally, our manager and employee forum programs provide an ongoing opportunity for employees to practice and apply learning around conversations aligned with our annual review process. We also have an employee development website that provides quick access to learning resources that are personalized to the individual's development needs.

Building Connections — With Each Other and our Communities. We believe that building connections between our employees, their families and our communities creates a more meaningful, fulfilling and enjoyable workplace. Through our engagement programs, our employees can pursue their interests and hobbies, connect to volunteering and giving opportunities and enjoy unique recreational experiences with family members. Leveraging our partnerships with various local arts and culture organizations, we have created numerous unique experiences for employees and their families around the world.

Since our employees are passionate about many causes, our corporate giving and volunteering programs support and encourage employees by engaging with those causes. In our offices around the world, our employee-led Giving Committees select local organizations to support, often in the form of grants that are primarily funded by the Qualcomm Foundation (which was established in 2011 to support charitable giving and volunteerism). We also frequently collaborate with these organizations on volunteer activities for our employees. Additionally, during fiscal 2020, thousands of our employees around the world utilized our charitable match program, benefiting more than 1,500 charitable organizations.

We encourage you to review the "Our People" section of our March 2020 Corporate Responsibility Report (located on our website) for more detailed information regarding our Human Capital programs and initiatives. Nothing on our website, including our Corporate Responsibility Report or sections thereof, shall be deemed incorporated by reference into this Annual Report.

Available Information

Our Internet address is www.qualcomm.com. There we make available, free of charge, our Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and any amendments to those reports (among others), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). We also make available on our Internet site public financial information for which a report is not required to be filed with or furnished to the SEC. Our SEC reports and other financial information can be accessed through the investor relations section of our Internet site. The information found on our Internet site is not part of this or any other report we file with or furnish to the SEC.

Information about our Executive Officers

Our executive officers (and their ages at September 27, 2020) are as follows:

Steve Mollenkopf, age 51, has served as Chief Executive Officer since March 2014 and as a director since December 2013. He served as Chief Executive Officer-elect and President from December 2013 to March 2014 and as President and Chief Operating Officer from November 2011 to December 2013. In addition, he served as Executive Vice President and Group President from September 2010 to November 2011 and as Executive Vice President and President, QCT from August 2008 to September 2010. Mr. Mollenkopf joined Qualcomm in 1994 as an engineer and throughout his tenure at Qualcomm has held several other technical and leadership roles. Mr. Mollenkopf has been a member of the board of directors of Boeing Company since April 2020. Mr. Mollenkopf served as a member of the board of directors of General Electric Company from November 2016 to April 2018. Mr. Mollenkopf holds a B.S. in Electrical Engineering from Virginia Tech and an M.S. in Electrical Engineering from the University of Michigan.

Heather Ace, age 50, has served as Executive Vice President, Human Resources since March 2020. Prior to joining Qualcomm, Ms. Ace was Senior Vice President, Human Resources at DexCom, Inc., a provider of continuous glucose monitoring, from July 2016 to March 2020. Prior to DexCom, she was Executive Vice President, Human Resources at Orexigen Therapeutics, Inc., a developer of treatments for obesity, from January 2016 to July 2016. Ms. Ace was Integration Leader for Royal Philips, leading the cross-functional integration of Philips Healthcare's acquisition of Volcano Corporation, from January 2015 to January 2016. She was Executive Vice President, Human Resources at Volcano Corporation from May 2012 to January 2015. Prior to May 2012, Ms. Ace served in various senior executive roles in human resources, post-acquisition/merger integration and employment law at Life Technologies Corporation. She began her career at Gray Cary Ware & Freidenrich (now DLA Piper) as a litigation and transactional employment attorney, specializing in mergers and acquisitions. Ms. Ace holds a B.A. in Law & Society from the University of California, Santa Barbara and a J.D. from Santa Clara School of Law.

Cristiano R. Amon, age 50, has served as President, Qualcomm Incorporated since January 2018. He served as Executive Vice President, Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated (QTI), and President, QCT, from November 2015 to January 2018. He served as Executive Vice President, QTI and Co-President, QCT from October 2012 to November 2015, Senior Vice President, Qualcomm Incorporated and Co-President, QCT from June 2012 to October 2012 and as Senior Vice President, QCT Product Management from October 2007 to June 2012, with responsibility for QTI's product roadmap, including the Qualcomm Snapdragon platforms. Mr. Amon joined Qualcomm in 1995 as an engineer and throughout his tenure at Qualcomm has held several other technical and leadership positions. Mr. Amon holds a B.S. in Electrical Engineering and an honorary doctorate from UNICAMP, the State University of Campinas, Brazil.

Brian T. Modoff, age 61, has served as Executive Vice President, Strategy and Mergers & Acquisitions, which includes responsibility for Qualcomm Ventures, since October 2015. Prior to joining Qualcomm, Mr. Modoff was a Managing Director in Equity Research at Deutsche Bank Securities Inc., a provider of financial services, from March 1999 to October 2015. Prior to joining Deutsche Bank, Mr. Modoff was a research analyst at several financial institutions from November 1993 to March 1999. Mr. Modoff previously worked in defense electronics, including at Rockwell International in manufacturing management, and for the U.S. Navy as a communications technician. Mr. Modoff holds a B.A. in Economics from California State University, Fullerton and a Master of International Management from the Thunderbird School of Global Management.

Akash Palkhiwala, age 45, has served as Executive Vice President and Chief Financial Officer since November 2019. He served as Senior Vice President and Interim Chief Financial Officer from August 2019 to November 2019. He served as Senior Vice President, QCT Finance from December 2015 to August 2019 and Senior Vice President and Treasurer, Qualcomm Incorporated from October 2014 to December 2015. Mr. Palkhiwala served as Vice President, QCT Finance from October 2012 to October 2014 and Vice President, QCT Finance from October 2009 to October 2012. He served in various other finance roles since joining Qualcomm in March 2001. Prior to joining Qualcomm, Mr. Palkhiwala was an Analyst at KeyBank. Mr. Palkhiwala has an undergraduate degree in Mechanical Engineering from L.D. College of Engineering in India and an M.B.A from the University of Maryland.

Alexander H. Rogers, age 63, has served as Executive Vice President and President, QTL since October 2016. He served as Senior Vice President and President, QTL from September 2016 to October 2016, Senior Vice President, Deputy General Counsel and General Manager, QTL from March 2016 to September 2016, Senior Vice President and Deputy General Counsel from October 2015 to March 2016 and Senior Vice President and Legal Counsel from April 2007 to October 2015. Prior to transitioning to QTL, Mr. Rogers led Qualcomm's litigation group. Mr. Rogers joined Qualcomm in January 2001 as an attorney. Prior to joining Qualcomm, Mr. Rogers was a partner at the law firm of Gray, Cary, Ware & Freidenrich (now DLA Piper), specializing in intellectual property and commercial litigation. Mr. Rogers holds a B.A. and an M.A. in English Literature from Georgetown University and a J.D. from Georgetown University Law Center.

Donald J. Rosenberg, age 69, has served as Executive Vice President, General Counsel and Corporate Secretary since October 2007. He served as Senior Vice President, General Counsel and Corporate Secretary of Apple Inc. from November 2006 to October 2007. From May 1975 to November 2006, Mr. Rosenberg held numerous positions at IBM Corporation, including Senior Vice President and General Counsel. Mr. Rosenberg has served as a member of the board of directors of NuVasive, Inc. since February 2016. Mr. Rosenberg holds a B.S. in Mathematics from the State University of New York at Stony Brook and a J.D. from St. John's University School of Law.

James H. Thompson, age 56, has served as Executive Vice President, Engineering, QTI and Chief Technology Officer since March 2017. He served as Executive Vice President, Engineering, QTI from October 2012 to March 2017 and as Senior Vice President, Engineering, Qualcomm Incorporated from July 1998 to October 2012. Dr. Thompson joined Qualcomm in 1992 as a senior engineer and throughout his tenure at Qualcomm held several other technical and leadership positions. Dr. Thompson holds a B.S., an M.S. and a Ph.D. in Electrical Engineering from the University of Wisconsin.

Item 1A. Risk Factors

You should consider each of the following factors in evaluating our business and our prospects. However, the risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also negatively impact our business, results of operations, cash flows and financial condition, and require significant management time and attention. In that case, the trading price of our common stock could decline. In addition to the risks and uncertainties set forth in the Risk Factor below entitled *"The recent coronavirus (COVID-19) pandemic has had an adverse effect on our business and results of operations, and we expect its impact will continue, at least in the near term,"* many of the risks and uncertainties set forth in the other Risk Factors below are exacerbated by the COVID-19 pandemic, government and business responses thereto and any further resulting decline in the global business and economic environment, and may be impacted by the extent and speed of the global economic recovery. You should also consider the other information set forth in this Annual Report in evaluating our business and our prospects, including but not limited to our financial statements and the related notes, and "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations." References to "and," "or" and "and/or" should be read to include the others, as appropriate.

RISKS RELATED TO THE CORONAVIRUS (COVID-19) PANDEMIC

The recent coronavirus (COVID-19) pandemic has had an adverse effect on our business and results of operations, and we expect its impact will continue, at least in the near term.

The rapid, global spread of COVID-19 and the fear it has created has resulted in significant economic uncertainty, significant declines in business and consumer confidence and global demand in the wireless industry (among others), a global economic slowdown, and has led to a global recession. Specifically, the decline in demand for smartphones and other consumer devices sold by our customers or licensees has resulted in decreased demand for our integrated circuit products (which are incorporated into such devices) and a decrease in the royalties we earn on the licensing of our intellectual property (which is dependent upon the number of such devices sold that utilize our intellectual property). We expect that demand for our products and demand for the products of our customers and licensees will continue to be negatively impacted in the near term.

Further, while to date we have not seen a significant impact on our manufacturing facilities or our supply chain, the ability of our suppliers to deliver on their commitments to us, or our ability to ship our products to our customers, may be negatively impacted by the pandemic and/or government responses thereto, such as travel bans and restrictions, quarantines, shelter-in-place and social distancing orders, declarations of states of emergency and shutdowns.

Although the spread of COVID-19 has caused us to modify our workforce practices, such as having the vast majority of our employees working from home, we have not experienced a significant negative impact to our business or results of operations. However, we could be negatively affected in the future if, among others, a significant number of our employees, or employees who perform critical functions, become ill and/or are quarantined as the result of exposure to COVID-19, or if government policies restrict the ability of those employees to perform their critical functions.

The COVID-19 pandemic could also impact our business, results of operations and financial condition through delayed, reduced or cancelled customer orders; the inability of our customers or licensees to purchase or pay for our products or technologies; the insolvency of key suppliers, customers or licensees; delays in reporting or payments from our customers or licensees; or failures by other counterparties. Additionally, state or federal governments may in the future increase corporate tax rates, increase employer payroll tax obligations and/or otherwise change tax laws to pay for stimulus and other actions that may be taken as a result of COVID-19.

The degree to which the COVID-19 pandemic impacts our future business, results of operations and financial condition will depend on future developments, which are uncertain, including but not limited to the duration, spread and severity of the pandemic, government responses and other actions to mitigate the spread of and to treat COVID-19, and when and to what extent normal business, economic and social activity and conditions resume. We are similarly unable to predict the extent to which the pandemic impacts our customers, licensees, suppliers and other partners and their financial conditions, but adverse effects on these parties could also adversely affect us. Finally, the COVID-19 pandemic makes it challenging for management to estimate the future performance of our business.

RISKS RELATED TO INDUSTRY DYNAMICS AND COMPETITION

Our revenues depend on our customers' and licensees' sales of products and services based on CDMA, OFDMA and other communications technologies, including 5G, and customer demand for our products based on these technologies.

We develop, patent and commercialize technology and products based on CDMA, OFDMA and other communications technologies, which are primarily wireless. We depend on our customers and licensees to develop devices and services based on these technologies with value-added features to drive consumer demand for new 3G/4G and 3G/4G/5G multimode devices, as well as 3G, 4G and 5G single-mode devices, and to establish the selling prices for such devices. Further, the timing of our shipment of our products is dependent on the timing of our customers' and licensees' deployments of new devices and services based on these technologies. Increasingly, we also depend on operators of wireless networks, our customers and licensees and other third parties to incorporate these technologies into new device types and into industries and applications beyond mobile, such as automotive and IoT, among others.

We have historically been successful during wireless technology transitions, including 3G, 4G and now 5G. Commercial deployments of 5G networks and devices have begun and will continue. However, the timing and scale of such deployments, in certain regions, have been and may in the future be delayed due to the COVID-19 pandemic.

We believe it is critical that we remain a leader in 5G technology development, standardization, intellectual property creation and technology licensing, and that we develop, commercialize and be a leading supplier of 5G integrated circuit products, in order to sustain and grow our business long-term.

Our revenues and growth in revenues could be negatively impacted, our business may be harmed and our substantial investments in these technologies may not provide us an adequate return, if our customers' and licensees' revenues and sales of products, particularly premium-tier products, and services using these technologies, and average selling prices of such products, decline due to, for example, the maturity of smartphone penetration in developed regions and China; our intellectual property and technical leadership included in the continued 5G standardization effort is less than in 3G and 4G standards; we are unable to drive the adoption of our products into networks and devices, including devices beyond mobile; or consumers' rates of replacement of smartphones and other computing devices decline.

Our industry is subject to intense competition in an environment of rapid technological change. Our success depends in part on our ability to adapt to such change and compete effectively; and such change and competition could result in decreased demand for our products and technologies or declining average selling prices for our products or those of our customers or licensees.

Our products and technologies face significant competition. We expect competition to increase as our current competitors expand their product offerings, improve their products or reduce the prices of their products as part of a strategy to maintain existing business and customers or attract new business and customers, as new opportunities develop, and as new competitors enter the industry. Competition in wireless communications is affected by various factors that include, among others: OEM concentrations; vertical integration; competition in certain geographic regions; government intervention or support of national industries or competitors; the ability to maintain product differentiation as the result of evolving industry standards and speed of technological change (including the transition to smaller geometry process technologies and the demand for always on, always connected capabilities); and value-added features that drive selling prices and consumer demand for new 3G/4G and 3G/4G/5G multimode devices, as well as 3G and 4G single-mode devices.

We anticipate that additional competitors will introduce products as a result of growth opportunities in wireless communications, the trend toward global expansion by foreign and domestic competitors, and technological and public policy changes. Additionally, the semiconductor industry has experienced and may continue to experience consolidation, which could result in significant changes to the competitive landscape. For example, if any key supplier of technologies and intellectual property to the semiconductor industry was sold to one of our competitors, it could negatively affect our ability to procure or license such technologies and intellectual property in the future, which could have wide-ranging impacts on our business and operations.

We expect that our future success will depend on, among other factors, our ability to:

- differentiate our integrated circuit products with innovative technologies across multiple products and features (e.g., modem, radio frequency front-end (RFFE), including mmWave, graphics and other processors, camera and connectivity) and with smaller geometry process technologies that drive both performance and lower power consumption;
- develop and offer integrated circuit products at competitive cost and price points to effectively cover all geographic regions and all device tiers;
- continue to be a leader in mobile, and drive the adoption of our technologies and integrated circuit products, including RFFE, into the most popular device models and across a broad spectrum of devices in mobile, such as smartphones, tablets, laptops and other mobile computing devices;
- increase or accelerate adoption of our technologies and products in industry segments or applications outside of mobile, including automotive and IoT;
- maintain or accelerate demand for our integrated circuit products at the premium device tier, while also driving the adoption of our products into high, mid- and low-tier devices across all regions;
- remain a leader in 5G (and 4G) technology development, standardization, intellectual property creation and licensing, and develop, commercialize and remain a leading supplier of 5G (and 4G) integrated circuit products, including RFFE products;
- create standalone value and contribute to the success of our existing businesses through acquisitions, joint ventures and other transactions, and by developing customer, licensee, vendor, distributor and other channel relationships in new industry segments or applications and with disruptive technologies and products;
- identify potential acquisition targets that will grow or sustain our business or address strategic needs, reach agreement on terms acceptable to us, close the transactions and effectively integrate these new businesses, products and technologies;
- provide leading products and technologies to OEMs, high level operating systems (HLOS) providers, operators, cloud providers and other industry participants as competitors, new industry entrants and other factors continue to affect the industry landscape;
- be a preferred partner and sustain preferred relationships providing integrated circuit products that support multiple operating system and infrastructure platforms to industry participants that effectively commercialize new devices using these platforms; and
- continue to develop brand recognition to effectively compete against better known companies in computing and other consumer driven segments and to deepen our presence in significant emerging regions and China.

We compete with many different semiconductor companies, ranging from multinational companies with integrated research and development, manufacturing, sales and marketing organizations across a broad spectrum of product lines, to companies that are focused on a single application, industry segment or standard product, including those that produce products for mobile, automotive and IoT, among others. Most of these competitors compete with us with respect to some, but not all, of our businesses. Companies that design integrated circuits based on CDMA, OFDMA, Wi-Fi or their derivatives are generally competitors or potential competitors. Examples (some of which are strategic partners of ours in other areas) include Broadcom, HiSilicon, MediaTek, Nvidia, NXP Semiconductors, Qorvo, Samsung, Skyworks, Texas Instruments and UNISOC (formally known as Spreadtrum Communications). Some of these current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to use our competitors' integrated circuit products, to utilize their own internally-developed integrated circuit products, or sell such products to others, or to utilize alternative technologies; lower cost structures or a willingness and ability to accept lower prices or lower margins for their products, particularly in China; foreign government support of other technologies, competitors or OEMs that sell devices that do not contain our integrated circuit products; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and OEMs in certain geographic regions (such as China); more experience in adjacent industry segments or applications beyond mobile (such as automotive and IoT); and a more established presence in certain regions.

In addition, certain of our largest integrated circuit customers have in the past utilized, currently utilize and may in the future utilize our competitors' integrated circuit products in some (or all) of their devices, rather than our products. Further, certain of those customers have developed, are developing or may develop their own integrated circuit products (effectively making them competitors), which they have in the past utilized, currently utilize and may in the future utilize in some (or all) of their devices, rather than our products. See also the Risk Factor entitled "*Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products)*." Further, political actions, including trade and/or national security protection policies, or other actions by governments, particularly the U.S. and Chinese governments, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our customers or suppliers, limit, prevent or discourage certain of our customers or suppliers from transacting business with us, or make it more expensive to do so. This could advantage our competitors by enabling them with increased sales, economies of scale, operating income and/or cash flows and/or enable critical technology transfer, allowing them to increase their investments in technology development, research and development and commercialization of products. See also the Risk Factor entitled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.*" Further, certain of our competitors develop and sell multiple components (including integrated circuit products) for use in devices and sell those components together to OEMs. Our competitors' sales of multiple components put us (and our discrete integrated circuit products) at a competitive disadvantage. Certain of our competitors also develop and sell infrastructure equipment for wireless networks and can optimize their integrated circuit products to perform on such networks to a degree that we are not able to, which again puts us at a competitive disadvantage.

Competition in any or all product tiers may result in the loss of business or customers, which would negatively impact our business, revenues, results of operations, cash flows and financial condition. Such competition may also reduce average selling prices for our chipset products or the products of our customers and licensees. Certain of these dynamics are particularly pronounced in emerging regions and China where competitors may have lower cost structures or may have a willingness and ability to accept lower prices or lower margins on their products. Reductions in the average selling prices of our chipset products, without a corresponding increase in volumes, would negatively impact our revenues, and without corresponding decreases in average unit costs, would negatively impact our margins. In addition, reductions in the average selling prices of our licensees' products, unless offset by an increase in volumes, would generally decrease total royalties payable to us, negatively impacting our licensing revenues.

RISKS RELATED TO OUR OPERATING BUSINESSES

We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected.

We derive a significant portion of our revenues from a small number of customers, and particularly from their sale of premium tier devices, and we expect this trend to continue in the foreseeable future. Our industry is experiencing and may continue to experience concentration of device share among a few companies, particularly at the premium tier, contributing to this trend. Chinese OEMs continue to grow their device share in China and are increasing their device share in regions outside of China, and we derive a significant portion of our revenues from a small number of these OEMs as well.

In addition, a number of our largest integrated circuit customers have developed, are developing or may develop their own integrated circuit products, or may choose our competitors' integrated circuit products, which they have in the past utilized, currently utilize and may in the future utilize in some (or all) of their devices, rather than our products, which could significantly reduce the revenues we derive from these customers. See also the Risk Factor entitled "*Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products)*."

Further, political actions, including trade and/or national security protection policies, or other actions by governments, particularly the U.S. and Chinese governments, have in the past and could in the future limit or prevent us from transacting business with some of our largest customers, limit, prevent or discourage those customers from transacting business with us, or make it more expensive to do so, any of which could also significantly reduce the revenues we derive from these customers. See also the Risk Factor entitled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions*."

In addition, we spend a significant amount of engineering and development time, funds and resources in understanding our key customers' feedback and/or specifications and attempt to incorporate such input into our product launches and technologies. These efforts may not require or result in purchase commitments from such customers or we may have lower purchases from such customers than expected, and consequently, we may not achieve the anticipated revenues from these efforts, or these efforts may result in non-recoverable costs.

The loss of any one of our significant customers, a reduction in the purchases of our products by such customers or the cancelation of significant purchases by any of these customers, whether due to the use of their own integrated circuit products or our competitors' integrated circuit products, government restrictions, the COVID-19 pandemic or otherwise, would reduce our revenues and could harm our ability to achieve or sustain expected results of operations, and a delay of significant purchases, even if only temporary, would reduce our revenues in the period of the delay.

Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development.

Further, the concentration of device share among a few companies, and the corresponding purchasing power of these companies, may result in lower prices for our products which, if not accompanied by a sufficient increase in the volume of purchases of our products, could have an adverse effect on our revenues and margins. In addition, the timing and size of purchases by our significant customers may be impacted by the timing of such customers' new or next generation product introductions, over which we have no control, and the timing and success of such introductions may cause our revenues and results of operations to fluctuate.

Apple purchases our MDM (or thin modem) products, which do not include our integrated application processor technology, and which have lower revenue and margin contributions than our combined modem and application processor products. Further, to the extent Apple takes device share from our customers who purchase our integrated modem and application processor products, our revenues and margins may be negatively impacted.

Our industry has also experienced, and we expect it will continue to experience, slowing growth in the premium-tier device segment due to, among other factors, lengthening replacement cycles in developed regions, where premium-tier smartphones are common; increasing consumer demand in emerging regions where premium-tier smartphones are less common and replacement cycles are on average longer than in developed regions and are continuing to lengthen; and a maturing premium-tier smartphone industry in which demand is increasingly driven by new product launches and innovation cycles.

A reduction in sales of premium-tier devices, a reduction in sales of our premium-tier integrated circuit products (which have a higher revenue and margin contribution than our lower-tier integrated circuit products), or a shift in share away from OEMs that utilize our premium-tier products, would reduce our revenues and margins and may harm our ability to achieve or sustain expected financial results. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development.

Although we have more than 300 licensees, we derive a significant portion of our licensing revenues from a limited number of licensees, which includes a small number of Chinese OEMs. In the event that one or more of our significant licensees fail to meet their reporting and payment obligations, or we are unable to renew or modify one or more of their license agreements under similar terms as their existing agreements, our revenues, results of operations and cash flows would be adversely impacted. Moreover, the future growth and success of our core licensing business will depend in part on the ability of our licensees to develop, introduce and deliver high-volume products that achieve and sustain customer acceptance. We do not have control over the product development, sales efforts or pricing of products by our licensees, and our licensees might not be successful. Reductions in sales of our licensees' products, or reductions in the average selling prices of wireless devices sold by our licensees without a sufficient increase in the volumes of such devices sold, would generally have an adverse effect on our licensing revenues. Such adverse impact may be mitigated by our per unit royalty caps that apply to certain categories of our licensees' complete wireless devices, namely smartphones, tablets, laptops and smartwatches.

Our business, particularly our semiconductor business, may suffer as a result of our customers vertically integrating (i.e., developing their own integrated circuit products).

Certain of our largest integrated circuit customers (for example, Samsung) develop their own integrated circuit products, which they have in the past utilized, and currently utilize, in certain of their devices and may in the future utilize in some (or all) of their devices, rather than our products (and they have and may continue to sell their integrated circuit products to third parties, discretely or together with certain of their other products, in competition with us).

Apple has utilized modem products of one of our competitors in some of its devices rather than our products, and solely utilized one of our competitors' products in several of its recent device launches. In April 2019, we entered into a new multi-year chipset supply agreement with Apple and began shipping modems under this agreement in the third quarter of fiscal 2020. In December 2019, Apple acquired Intel's modem assets and is developing its own modem products using these assets. Accordingly, Apple is expected to use its own modem products, rather than our products, in some (or all) of its future devices.

Similarly, we derive a significant portion of our revenues from Chinese OEMs. Certain of our customers in China have developed, and others may in the future develop, their own integrated circuit products and use such integrated circuit products in their devices rather than our integrated circuit products, including due to pressure from or policies of the Chinese government (whose *Made in China 2025* campaign targets 70% semiconductor self-sufficiency by 2025), concerns over losing access to our integrated circuit products as a result of actual, threatened or potential U.S. or Chinese government actions or policies, including trade protection or national security policies, or other reasons.

If some or all of our largest customers and/or the largest smartphone OEMs utilize their own integrated circuit/modem products in some (or all) of their devices rather than our products, our business, revenues, results of operations, cash flows and financial position could be materially adversely impacted. See also the Risk Factor entitled "*We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected*."

A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.

We derive a significant portion of our revenues from Chinese OEMs, and from non-Chinese OEMs that utilize our integrated circuit products in their devices and sell those devices into China, which has the largest number of smartphone users in the world. We also source certain critical integrated circuit products from suppliers in China.

Due to various factors, including pressure, encouragement or incentives from, or policies of, the Chinese government (including its *Made in China 2025* campaign), concerns over losing access to our integrated circuit products as a result of actual, threatened or potential U.S. or Chinese government actions or policies, including trade protection or national security policies, or other reasons, some of our Chinese integrated circuit customers have developed, and others may in the future develop, their own integrated circuit products and use such integrated circuit products in their devices, or use our competitors' integrated circuit products in their devices, rather than our products.

Political actions, including trade protection and national security policies of the U.S. and Chinese governments, such as tariffs, bans or placing companies on restricted entity lists, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our Chinese customers or suppliers, limit, prevent or discourage certain of our Chinese customers or suppliers from transacting business with us, or make it more expensive to do so. Given our revenue concentration in China, if, due to actual, threatened or potential U.S. or Chinese government actions or policies, we were further limited in, or prohibited from, obtaining critical integrated circuit products from suppliers in China or selling our integrated circuit products to Chinese OEMs; if our non-Chinese OEM customers were limited in, or prohibited from, selling devices into China that incorporate our integrated circuit products; if Chinese OEMs develop and use their own integrated circuit products or use our competitors' integrated circuit products in some (or all) of their devices rather than our integrated circuit products; if Chinese tariffs on our integrated circuit products or on devices which incorporate our integrated circuit products made purchasing such products or devices more expensive to Chinese OEMs or Chinese consumers; or if our Chinese licensees delay or cease making payments of license fees they owe us, our business, revenues, results of operations, cash flows and financial position could be materially harmed.

Finally, government policies in China that regulate the amount and timing of funds that may flow out of the country have impacted and may continue to impact the timing of our receipt of, and/or ability to receive, payments from our customers and licensees in China, which may negatively impact our cash flows.

RISKS SPECIFIC TO OUR LICENSING BUSINESS

Efforts by some OEMs to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business.

From time to time, companies initiate various strategies to attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property. These strategies have included: (i) litigation, often alleging infringement of patents held by such companies, patent misuse, patent exhaustion, patent invalidity or unenforceability of our patents or licenses, alleging that we do not license our patents on fair, reasonable and nondiscriminatory (FRAND) terms, or alleging some form of unfair competition or competition law violation; (ii) taking positions contrary to our understanding (and/or the plain language) of their contracts with us; (iii) appeals to governmental authorities; (iv) collective action, including working with wireless operators, standards bodies, other like-minded companies and organizations, on both formal and informal bases, to adopt intellectual property policies and practices that could have the effect of limiting returns on intellectual property innovations; (v) lobbying governmental regulators and elected officials for the purpose of seeking the reduction of royalty rates or the base on which royalties are calculated, seeking to impose some form of compulsory licensing or weakening a patent holder's ability to enforce its rights or obtain a fair return for such rights; and (vi) attempts by licensees to shift their royalty obligation to their suppliers in order to lower the wholesale (i.e., licensee's) selling price on which the royalty is calculated.

In addition, certain licensees have disputed, underreported, underpaid, not reported or not paid royalties owed to us under their license agreements or reported to us in a manner that is not in compliance with their contractual obligations, and certain companies have yet to enter into or have delayed entering into or renewing license agreements with us for their use of our intellectual property, and they or others may engage in such behavior in the future. The fact that one or more licensees dispute, underreport, underpay, do not report or do not pay royalties owed to us may encourage other licensees to take similar actions or not renew their existing license agreements, and may encourage other licensees or unlicensed companies to delay entering into, or to not enter into, new license agreements. Further, to the extent such licensees and companies increase their device share, the negative impact of their underreporting, underpayment, non-payment or non-reporting on our business, revenues, results of operations, cash flows and financial condition will be exacerbated.

We have been in the past and are currently subject to various litigation and governmental investigations and proceedings. Certain of these matters are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We may become subject to other litigation or governmental investigations or proceedings in the future. Additionally, certain of our direct and indirect customers and licensees have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition. See also the Risk

Factors below entitled *“Our business may suffer as a result of adverse rulings in government investigations or proceedings”* and *“Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations.”*

In addition, in connection with our participation in SDOs, we, like other patent owners, generally have made contractual commitments to such organizations to license those of our patents that would necessarily be infringed by standard-compliant products as set forth in those commitments. Some manufacturers and users of standard-compliant products advance interpretations of these commitments that are adverse to our licensing business, including interpretations that would limit the amount of royalties that we could collect on the licensing of our standard-essential patent portfolio.

Further, some companies or entities have proposed significant changes to existing intellectual property policies for implementation by SDOs and other industry organizations with the goal of significantly devaluing standard-essential patents. For example, some have put forth proposals which would require a maximum aggregate intellectual property royalty rate for the use of all standard-essential patents owned by all of the member companies to be applied to the selling price of any product implementing the relevant standard. They have further proposed that such maximum aggregate royalty rate be apportioned to each member company with standard-essential patents based upon the number of standard-essential patents held by such company. Others have proposed that injunctions should not be an available remedy for infringement of standard-essential patents and have made proposals that could severely limit damage awards and other remedies by courts for patent infringement (e.g., by severely limiting the base upon which the royalty rate may be applied). A number of these strategies are purportedly based on interpretations of the policies of certain SDOs concerning the licensing of patents that are or may be essential to industry standards and on our (or other companies') alleged failure to abide by these policies. Some SDOs, courts and governmental agencies have adopted, and may in the future adopt, some or all of these interpretations or proposals in a manner adverse to our interests, including in litigation to which we may not be a party.

We expect that such proposals, interpretations and strategies will continue in the future, and if successful, our business model would be harmed, either by limiting or eliminating our ability to collect royalties (or by reducing the royalties we can collect) on all or a portion of our standard-essential patent portfolio, limiting our return on investment with respect to new technologies, limiting our ability to seek injunctions against infringers of our standard-essential patents, constraining our ability to make licensing commitments when submitting our technologies for inclusion in future standards (which could make our technologies less likely to be included in such standards) or forcing us to work outside of SDOs or other industry groups to promote our new technologies, and our revenues, results of operations and cash flows could be negatively impacted. In addition, the legal and other costs associated with asserting or defending our positions have been and continue to be significant. We expect that such challenges, regardless of their merits, will continue into the foreseeable future and will require the investment of substantial management time and financial resources.

Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations.

As described in the Risk Factor "*Our business may suffer as a result of adverse rulings in government investigations or proceedings*" below, we have been in the past and are currently subject to various governmental investigations and proceedings, as well as private legal proceedings, challenging our patent licensing and chipset sales practices. Certain of these matters are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We believe that one intent of certain of these investigations and legal proceedings has been to reduce the amount of royalties that licensees are required to pay to us for their use of our intellectual property. We may become subject to other litigation or governmental investigations or proceedings in the future.

If we were required to reduce the royalty rates in our patent license agreements, our revenues, earnings and cash flows would be negatively impacted absent a sufficient increase in the volume of sales of devices upon which royalties are paid. Similarly, if we were required to reduce the base on which our royalties are calculated, our revenues, results of operations and cash flows would be negatively impacted unless there was a sufficient increase in the volume of sales of devices upon which royalties are paid or we were able to increase our royalty rates to offset the decrease in revenues resulting from such lower royalty base (assuming the absolute royalty dollars were below any relevant royalty caps).

If we were required to grant patent licenses to chipset manufacturers (which could lead to implementing a more complex, multi-level licensing structure in which we license certain portions of our patent portfolio to chipset manufacturers and other portions to OEMs), we would incur additional transaction costs, which may be significant, and we could incur delays in recognizing revenues until license negotiations were completed. In addition, our licensing revenues and earnings would be negatively impacted if we were not able to obtain, in the aggregate, equivalent revenues under such a multi-level licensing structure.

If we were required to sell chipsets to OEMs that do not have a license to our patents, our licensing program could be negatively impacted by patent exhaustion claims raised by such unlicensed OEMs (i.e., claims that our sale of chipsets to such OEMs forecloses us from asserting any patents substantially embodied by the chipsets against such OEMs). Such sales would provide OEMs with a defense in the event we asserted our patents against them to obtain licensing revenue for those patents. This could have a material adverse effect on our licensing program and our results of operations, cash flows and financial condition.

To the extent that we were required to implement any of these new licensing and/or business practices, including by modifying or renegotiating our existing license agreements or pursuing other commercial arrangements, we would incur additional transaction costs, which may be significant, we could incur delays in recognizing revenues until license negotiations were completed, and our business, revenues, results of operations, cash flows and financial condition could be harmed. The impact of any such changes to our licensing practices could vary widely and by jurisdiction, depending on the specific outcomes and the geographic scope of such outcomes. In addition, if we were required to make modifications to our licensing practices in one jurisdiction, licensees or governmental agencies in other jurisdictions may attempt to obtain similar outcomes for themselves or for such other jurisdictions, as applicable.

The continued and future success of our licensing programs requires us to continue to evolve our patent portfolio and to renew or renegotiate license agreements that are expiring or to cover additional future patents.

We own a very strong portfolio of issued and pending patents related to 3G, 4G, 5G and other technologies. It is critical that we continue to evolve our patent portfolio, particularly in 5G. If we do not maintain a strong portfolio that is applicable to current and future standards, products and services, our future licensing revenues could be negatively impacted.

Further, the licenses granted to and from us under a number of our license agreements include only patents that are either filed or issued prior to a certain date. As a result, there are agreements with some licensees where later patents are not licensed by or to us. Additionally, our patent license agreements in effect that constitute a significant portion of our licensing revenues are effective for a specified term. In order to license or to obtain a license to such later patents or after the expiration of the specified term, and to receive royalties after the expiration date of the specified term, we will need to extend or modify such license agreements or enter into new license agreements with such licensees more frequently than we have done historically. We might not be able to extend or modify license agreements, or enter into new license agreements, in the future without negatively affecting the material terms and conditions of our license agreements with such licensees, and such modifications or new agreements may negatively impact our revenues. In some circumstances, we may extend, modify or enter into new license agreements as a result of arbitration or litigation, and terms imposed by arbitrators or courts may be less favorable to us than existing terms and may impact the financial or other terms of license agreements not subject to the litigation or arbitration. If there is a delay in extending, modifying or entering into a new license agreement with a licensee, there would be a delay in our ability to recognize revenues related to that licensee’s product sales. Further, if we are unable to reach agreement on such modifications or new agreements, it could result in patent infringement litigation with such companies.

RISKS RELATED TO REGULATORY AND LEGAL CHALLENGES

Our business may suffer as a result of adverse rulings in government investigations or proceedings.

We have been in the past and are currently subject to various governmental investigations and proceedings. Certain of these matters are described more fully in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.” Key allegations or findings in those matters include, among others, that we violate FRAND licensing commitments by refusing to grant licenses to chipset manufacturers; that our royalty rates are too high; that the base on which our royalties are calculated should be something less than the wholesale (i.e., licensee’s) selling price of the applicable device (minus certain permitted deductions); that we unlawfully require customers to execute a patent license before we sell them cellular modem chipsets; that we have entered into exclusive agreements with chipset customers that foreclose competition; that we leverage our position in baseband chipsets in the RFFE space; and that we violate antitrust laws, engage in anticompetitive conduct and unfair methods of competition. We may become subject to other litigation or governmental investigations or proceedings in the future.

Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others, the loss of our ability to enforce one or more of our patents; injunctions; monetary damages or fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed OEMs or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. If some or all of our license agreements are declared invalid or unenforceable and/or we are required to renegotiate these license agreements, we may not receive, or may not be able to recognize, some or any licensing or royalty revenues under the impacted license agreements unless and until we enter into new license agreements; and even licensees whose license agreements are not impacted may demand to renegotiate their agreements or invoke the dispute resolution provision in their agreements, and we may not be able to recognize some or any licensing or royalty revenues under such agreements. The renegotiation of license agreements could result in terms which are less favorable to us than existing terms, or lead to arbitration or litigation to resolve the licensing terms, which could also be less favorable to us than existing terms, and each of which could take months or possibly years. Licensees may underreport, underpay, not report or not pay royalties owed to us pending the conclusion of such negotiations, arbitration or litigation. In addition, we may be sued for alleged overpayments of past royalties paid to us, including private antitrust actions seeking treble damages under U.S. antitrust laws. The occurrence of any of the above could have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition, and our stock price could decline, possibly significantly, in which case we may have to significantly cut costs and other uses of cash, including in research and development, significantly impairing our ability to maintain product and technology leadership and invest in next generation technologies such as 5G. Further, depending on the breadth and severity of the circumstances above, we may have to reduce, suspend or eliminate our capital return programs, and our ability to timely pay our indebtedness may be impacted. In addition, a governmental body in a particular country or region may successfully assert and impose remedies with effects that extend beyond the borders of that country or region.

These challenges have required, and we expect that they will continue to require, the investment of significant management time and attention and have resulted, and we expect that they will continue to result, in significant legal costs until the respective matters are resolved.

RISKS RELATED TO SUPPLY AND MANUFACTURING

We depend on a limited number of third-party suppliers for the procurement, manufacture and testing of our products manufactured in a fabless production model. If we fail to execute supply strategies that provide supply assurance, technology leadership and reasonable margins, our business and results of operations may be harmed. We are also subject to order and shipment uncertainties that could negatively impact our results of operations.

We primarily utilize a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Other than the facilities we own that manufacture certain of our RFFE modules and RF filter products, we rely on third-party suppliers to perform the manufacturing and assembly, and most of the testing, of our integrated circuits. Our suppliers are also responsible for the procurement of most of the raw materials used in the production of our integrated circuits. There are a limited number of such third-party suppliers, and even fewer who are capable of manufacturing at the leading process technology nodes. We employ both turnkey and two-stage manufacturing models to purchase our integrated circuits. Under the turnkey model, our foundry suppliers are responsible for delivering fully assembled and tested integrated circuits. Under the two-stage manufacturing model, we purchase die in singular or wafer form from semiconductor manufacturing foundries and contract with separate third-party suppliers for manufacturing services such as wafer bump, probe, assembly and the majority of our final test requirements. The semiconductor manufacturing foundries that supply our products are primarily located in Asia, as are our primary warehouses where we store finished goods for fulfillment of customer orders.

The following could have an adverse effect on our ability to meet customer demand and negatively impact our revenues, business operations, profitability and cash flows:

- a reduction, interruption, delay or limitation in our product supply sources;
- a failure by our suppliers to procure raw materials or allocate adequate raw materials for our products;
- a failure by our suppliers to allocate adequate manufacturing or test capacity for our products;
- our suppliers' inability to react to shifts in product demand or an increase in raw material or component prices;
- our suppliers' inability to develop or maintain, or a delay in developing or building out manufacturing capacity for leading process technologies, including transitions to smaller geometry process technologies;
- the loss of a supplier or the inability of a supplier to meet performance, quality or yield specifications or delivery schedules;
- additional expense or production delays as a result of qualifying a new supplier and commencing volume production or testing in the event of a loss of, or a decision to add or change, a supplier;
- natural disasters or geopolitical conflicts impacting our suppliers;
- health crises, including epidemics or pandemics, such as the COVID-19 pandemic, and government and business responses thereto, which impact our suppliers, including as a result of quarantines or closure; and
- trade or national security protection policies, particularly U.S. or Chinese government policies, that limit or prevent us from transacting business with suppliers of critical integrated circuit products, or that limit or prevent such suppliers from transacting business with us or from procuring materials, machinery or technology necessary to manufacture goods for us.

While we have established alternate suppliers for certain technologies, there are a limited number of such suppliers, and even fewer who are capable of operating at the leading process technology nodes. We rely on sole- or limited-source suppliers for certain products, which may exacerbate the aforementioned risks or subject us to other significant risks, including: poor product performance and reduced control over delivery schedules, manufacturing capability and yields, quality assurance, quantity and costs. To the extent we have established alternate suppliers, these suppliers may require significant levels of time and support to bring such technologies to production, both of which may increase for complex or leading process technologies. As a result, we may invest a significant amount of effort and resources and incur higher costs to support and maintain such alternate suppliers. Further, any future consolidation of foundry suppliers, or limitation in a foundry supplier's ability to manufacture products for us due to trade or national security protection policies, could increase our vulnerability to sole- or limited-source arrangements and reduce our suppliers' willingness to negotiate pricing, which could negatively impact our ability to achieve cost reductions and could increase our manufacturing costs, and limit the amount of capacity available to us. Our arrangements with our suppliers may obligate us to incur costs to manufacture and test our products that do not decrease at the same rate as decreases in pricing to our customers. Our ability, and that of our suppliers, to develop or maintain leading process technologies, including transitions to smaller geometry process technologies (which adds risk to manufacturing yields and reliability), and to effectively compete with the manufacturing processes and performance of our competitors, could impact our ability to introduce new products and meet customer demand, could increase our costs (possibly decreasing our margins) and could subject us to the risk of excess inventories. Any of the above could negatively impact our business, results of operations and cash flows.

Although we have long-term contracts with our suppliers, most of these contracts do not provide for long-term capacity commitments. To the extent we do not have firm commitments from our suppliers over a specific time period or for any specific quantity, our suppliers may allocate, and in the past have allocated, capacity to the production and testing of products for their other customers while reducing or limiting capacity to manufacture or test our products, and such capacity may be limited based on our suppliers' ability and willingness to invest in the capital required to manufacture in the leading process technologies. Accordingly, capacity for our products may not be available when we need it or at reasonable prices. To the extent we do obtain long-term capacity commitments, we may incur additional costs related to those commitments or make non-refundable payments for capacity commitments that are not used.

Our suppliers or potential alternate suppliers may manufacture CDMA- or OFDMA-based integrated circuits, for themselves or for other companies, that compete with our products. Such suppliers have in the past and could again elect to allocate raw materials and manufacturing capacity to their own products or products of our competitors and reduce or limit the production of our products.

In addition, we may not receive reasonable pricing, manufacturing or delivery terms from our suppliers. We cannot guarantee that the actions of our suppliers will not cause disruptions in our operations that could harm our ability to meet our delivery obligations to our customers or increase our cost of sales. To the extent we are unable to obtain adequate supply, we may be obligated to make payment to our customers for such shortfalls.

Additionally, we place orders with our suppliers using our and our customers' forecasts of demand for our products, which are based on a number of assumptions and estimates. As we move to smaller geometry process technologies, the manufacturing lead-time increases. As a result, the orders we place with our suppliers are generally only partially covered by commitments from our customers. If we, or our customers, overestimate demand, or if demand is impacted by factors outside of our or our customers' control, such as the COVID-19 pandemic, that is not under a binding commitment from our customers, we may experience increased excess or obsolete inventory, which would negatively impact our results of operations.

There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model, environmental compliance and liability, impacts related to climate change, exposure to natural disasters, timely supply of equipment and materials, and various manufacturing issues.

We own and operate various facilities that manufacture certain of our RFFE modules and RF filter products. Manufacturing facilities are characterized by a higher portion of fixed costs relative to a fabless model. We may be faced with a decline in the utilization rates of our manufacturing facilities due to decreases in demand for our products, including in less favorable industry environments. During such periods, our manufacturing facilities could operate at lower capacity levels, while the fixed costs associated with such facilities would continue to be incurred, resulting in lower gross profit.

We are subject to many environmental, health and safety laws and regulations in each jurisdiction in which we operate our manufacturing facilities, which govern, among other things, emissions of pollutants into the air; wastewater discharges; the use, storage, generation, handling and disposal of hazardous substances and other waste; the investigation and remediation of soil and ground water contamination; and the health and safety of our employees. Certain environmental laws impose strict, and in certain circumstances joint and several, liability on current or previous owners or operators of real property, or parties who arranged for hazardous substances to be sent to disposal or treatment facilities, for the cost of investigation, removal or remediation of hazardous substances. As a result, we may incur clean-up costs in connection with any such removal or remediation efforts, as well as other third-party claims in connection with contaminated sites. In addition, we could be held liable for consequences arising out of human exposure to hazardous substances or other environmental damage. If we, or companies or facilities we acquire or have acquired, in the past failed or in the future fail to comply with any such laws and regulations, then we could incur liabilities, fines or prohibitions on the sale of products we manufacture, and our operations could be suspended. Such laws and regulations could also restrict our ability to modify or expand our facilities, could require us to acquire costly equipment, or could require other significant expenditures. We are also required to obtain and maintain environmental permits from governmental authorities for certain of our operations. While we have policies and procedures designed to ensure compliance with applicable laws, regulations and permits, we cannot make assurances that we, or our employees, contractors or agents, will at all times be in compliance with such laws, regulations and permits, or our related policies and procedures.

Climate change concerns and the potential resulting environmental impact may result in new environmental, health and safety laws and regulations that may affect us, our suppliers and our customers. Such laws or regulations could cause us to incur additional direct costs for compliance, as well as increased indirect costs resulting from our customers, suppliers or both incurring additional compliance costs that are passed on to us. These costs may adversely impact our results of operations and financial condition. In addition, climate change may pose physical risks to our manufacturing facilities or our suppliers' facilities, including increased extreme weather events that could result in supply delays or disruptions.

We have manufacturing facilities in Asia and Europe. If tsunamis, flooding, earthquakes, volcanic eruptions or other natural disasters, effects of climate change or geopolitical conflicts, were to damage, destroy or disrupt our manufacturing facilities, it could disrupt our operations, delay production and shipments of inventory and result in costly repairs, replacements or other costs. In addition, natural disasters, effects of climate change or geopolitical conflicts may result in disruptions in transportation, distribution channels and supply chains, and significant increases in the prices of raw materials. Further, health crises, including epidemics or pandemics, such as the COVID-19 pandemic, and government and business responses thereto, could affect our manufacturing facilities, including by resulting in quarantines and/or closures, which would result in disruptions to and potential closures of our manufacturing operations.

Our manufacturing operations depend on securing raw materials and other supplies in adequate quality and quantity in a timely manner from multiple suppliers, and in some cases, we rely on a limited number of suppliers, particularly in Asia. Accordingly, there may be cases where supplies of raw materials and other products are interrupted by disaster, accident or some other event at a supplier, supply is suspended due to quality or other issues, or there is a shortage of supply due to a rapid increase in demand, among others, which could impact production and prevent us from supplying our products to our customers. If the supply-demand balance is disrupted, it may considerably increase costs of manufacturing due to increased prices we pay for raw materials. From time to time, suppliers may extend lead times, limit amounts supplied to us or increase prices due to capacity constraints or other factors. Additionally, supply and costs of raw materials may be negatively impacted by trade and/or national security protection policies, such as tariffs, or actions by governments that limit or prevent us from transacting business with certain companies or that limit or prevent certain companies from transacting business with us, or trade tensions, particularly with countries in Asia. Further, it may be difficult or impossible to substitute one piece of equipment for another or replace one type of material with another. A failure by our suppliers to deliver our requirements could result in disruptions to our manufacturing operations.

Our manufacturing processes are highly complex, require advanced and costly equipment and must be continuously modified to improve yields and performance. Difficulties in the production process can reduce yields or interrupt production, and as a result, we may not be able to deliver our products or do so in a timely, cost-effective or competitive manner. Further, to remain competitive and meet customer demand, we may be required to improve our facilities and process technologies and carry out extensive research and development, each of which may require investment of significant amounts of capital and may have a material adverse effect on our results of operations, cash flows and financial condition.

Finally, we typically begin manufacturing our products using our or our customers' forecasts of demand for our products, which are based on a number of assumptions and estimates and are generally not covered by purchase commitments. As a result, we incur inventory and manufacturing costs in advance of anticipated sales, which sales ultimately may not materialize or may be lower than expected. If we or our customers overestimate demand, or if demand is impacted by factors outside of our or our customers' control such as the COVID-19 pandemic or trade or national security protection policies, that is not under a binding commitment from our customers, we may experience higher inventory carrying and operating costs and/or increased excess or obsolete inventory, which would negatively impact our results of operations.

RISKS RELATED TO NEW AND ADJACENT INITIATIVES

Our growth depends in part on our ability to extend our technologies and products into new and expanded product areas, and adjacent industry segments or applications beyond mobile. Our research, development and other investments in these new and expanded product areas, industry segments or applications, and related technologies and products, as well as in our existing technologies and products, and new technologies, may not generate operating income or contribute to future results of operations that meet our expectations.

While we continue to invest significant resources toward advancements primarily in support of 4G- and 5G-based technologies, we also invest in new and expanded product areas, and adjacent industry segments or applications, by utilizing our existing technical and business expertise and through acquisitions.

In particular, our future growth depends in part on new and expanded product areas, such as RFFE, and adjacent industry segments or applications beyond mobile, such as automotive and IoT; our ability to develop leading and cost-effective technologies and products for new and expanded product areas, adjacent industry segments or applications; and third parties incorporating our technologies and products into devices used in these product areas, industry segments or applications. Accordingly, we intend to continue to make substantial investments in these new and expanded product areas and adjacent industry segments or applications, and in developing new products and technologies for these product areas, industry segments or applications. Our growth also depends significantly on our ability to develop and patent 5G technologies, and to develop and commercialize products using 5G technologies.

However, our research, development and other investments in these new and expanded product areas and adjacent industry segments or applications, and corresponding technologies and products, as well as in our existing, technologies and products and new technologies, such as 5G, use of licensed, shared and unlicensed spectrum and convergence of cellular and Wi-Fi, may not succeed because, among other reasons: we may not be issued patents on the technologies we develop; the technologies we develop may not be incorporated into relevant standards; new and expanded product areas, adjacent industry segments or applications, and consumer demand therein, may not develop or grow as anticipated; our strategies or the strategies of our customers, licensees or partners may not be successful; alternate technologies may be better or may reduce the advantages we anticipate from our investments; competitors' technologies or products may be more cost effective, have more capabilities or fewer limitations or are brought to market faster than our new technologies or products; we may not be able to develop, or our competitors may have more established and/or stronger, customer, vendor, distributor or other channel relationships; and competitors may have longer operating histories in industry segments or applications that are new to us. We may also underestimate the costs of or overestimate the future revenues or margins that could result from these investments, and these investments may not, or may take many years to, generate material returns.

Further, the automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in significant barriers to entry and increased costs.

If our new technologies and products are not successful, or are not successful in the time frames we anticipate, we may incur significant costs and asset impairments, our business and revenues may not grow or grow as anticipated, our revenues and margins may be negatively impacted, our stock price may decline and our reputation may be harmed.

We may engage in strategic acquisitions and other transactions or make investments, or be unable to consummate planned strategic acquisitions, which could adversely affect our results of operations or fail to enhance stockholder value.

We engage in strategic acquisitions and other transactions, including joint ventures, and make investments, which we believe are important to the future of our business, with the goal of maximizing stockholder value. From time to time, we acquire businesses and other assets, including patents, technology and other intangible assets, enter into joint ventures or other strategic transactions and purchase minority equity interests in or make loans to companies, including those that may be private and early-stage. Our strategic activities are generally focused on opening or expanding opportunities for our products and technologies and supporting the design and introduction of new products (or enhancing existing products) for mobile, and for new industry segments or applications beyond mobile. Many of our strategic activities entail a high degree of risk and require the use of significant amounts of capital, and investments may not become liquid for several years after the date of the investment, if at all. Our strategic activities may not generate financial returns or result in increased adoption or continued use of our technologies or products. We may underestimate the costs or overestimate the benefits, including product, revenue, cost and other synergies and growth opportunities that we expect to realize, and we may not achieve those benefits. In some cases, we may be required to consolidate or record our share of the earnings or losses of companies in which we have acquired ownership interests. In addition, we have in the past and may record impairment charges in the future related to our strategic activities. Any losses or impairment charges that we incur related to strategic activities will have a negative impact on our results of operations and financial condition, and we may continue to incur new or additional losses related to strategic assets or investments that we have not fully impaired or exited.

Achieving the anticipated benefits of business acquisitions, including joint ventures and other strategic investments in which we have management and operational control, depends in part upon our ability to integrate the businesses in an efficient and effective manner and achieve anticipated synergies, and we may not be successful in these efforts. Such integration is complex and time consuming and involves significant challenges, including, among others: retaining key employees; successfully integrating new employees, facilities, technology, products, processes, operations (including supply and manufacturing operations), sales and distribution channels, business models and business systems; retaining customers and suppliers of the businesses; consolidating research and development operations; minimizing the diversion of management's attention from ongoing business matters; consolidating corporate and administrative infrastructures; and managing the increased scale, complexity and globalization of our business, operations and employee base. We may not derive any commercial value from associated technologies or products or from future technologies or products based on these technologies, and we may be subject to liabilities that are not covered by indemnification protection that we may obtain, and we may become subject to litigation. Additionally, we may not be successful in entering or expanding into new sales or distribution channels, business or operational models, geographic regions, industry segments or applications served by or adjacent to the associated businesses or in addressing potential new opportunities that may arise out of our strategic acquisitions.

If we do not achieve the anticipated benefits of business acquisitions or other strategic activities, our business and results of operations may be adversely affected, and we may not enhance stockholder value by engaging in these transactions.

Many of our acquisitions and other strategic investments require approval by the United States and foreign government agencies. Certain agencies in the past have, and may in the future, deny the transaction or fail to approve in a timely manner, resulting in us not realizing the anticipated benefits of the proposed transaction. Future acquisitions or other strategic investments may be more difficult, complex or expensive to the extent that our reputation for our ability to consummate acquisitions has been harmed. Further, if U.S./China relations remain strained, our ability to consummate any transaction that would require approval from the relevant regulatory agency(ies) in China may be severely impacted.

RISKS RELATED TO CYBERSECURITY OR MISAPPROPRIATION OF OUR CRITICAL INFORMATION

Our business and operations could suffer in the event of security breaches of our information technology systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information.

Third parties regularly attempt to gain unauthorized access to our information technology systems, and many such attempts are increasingly more sophisticated. The perception that the COVID-19 pandemic has made companies' information technology systems more vulnerable has increased the already significant volume of such attempts. These attempts, which might be related to industrial, corporate or other espionage, criminal hackers or state-sponsored intrusions, include trying to covertly introduce malware to our computers and networks, including those in our manufacturing operations, and impersonating authorized users, among others. We may also be subject to ransom-style cyber-attacks, which could impact our information technology systems and cause widespread disruption to our business, including our manufacturing operations, and expose our confidential or propriety information. In addition, third parties that we may rely on to store and/or process our confidential information may also be subject to similar threats. Such threats could result in the misappropriation, theft, misuse, disclosure, loss or destruction of the technology, intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, as well as damage to or disruptions in our information technology systems. These threats are constantly evolving, increasing the difficulty of successfully defending against them or implementing adequate preventative measures. We seek to detect and investigate all security incidents and to prevent their recurrence, but attempts to gain unauthorized access to our information technology systems or other attacks may be successful, and in some cases, we might be unaware of an incident or its magnitude and effects.

In addition, employees and former employees, in particular former employees who become employees of our competitors, customers, licensees or other third parties, including state actors, have in the past and may in the future misappropriate, use, publish or provide to our competitors, customers, licensees or other third parties, including state actors, our technology, intellectual property or other proprietary or confidential information. This risk is exacerbated as competitors for talent, particularly engineering talent, increasingly attempt to hire our employees. See also the Risk Factor entitled *"We may not be able to attract and retain qualified employees."* Similarly, we provide access to certain of our technology, intellectual property and other proprietary or confidential information to our direct and indirect customers and licensees and certain of our consultants, who have in the past and may in the future wrongfully use such technology, intellectual property or information, or wrongfully disclose such technology, intellectual property or information to third parties, including our competitors or state actors. We also provide access to certain of our technology, intellectual property and other proprietary or confidential information to certain of our joint venture partners, including those affiliated with state actors and including in foreign jurisdictions where ownership restrictions may require us to take a minority ownership interest in the joint venture. Such joint venture partners may wrongfully use such technology, intellectual property or information, or wrongfully disclose such technology, intellectual property or information to third parties, including our competitors or state actors.

The misappropriation, theft, misuse, disclosure, loss or destruction of the technology, intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives, cause us to lose business, damage our reputation, subject us to legal or regulatory proceedings, cause us to incur other loss or liability and otherwise adversely affect our business. We expect to continue to devote significant resources to the security of our information technology systems, and our technology, intellectual property and proprietary and confidential information.

Further, China has implemented, and other countries or regions may implement, cybersecurity laws that require our overall information technology security environment to meet certain standards and/or be certified. Such laws may be complex, ambiguous and subject to interpretation, which may create uncertainty regarding compliance. As a result, our efforts to comply with such laws may be expensive and may fail, which could adversely affect our business, results of operations and cash flows.

RISKS RELATED TO INTELLECTUAL PROPERTY

The enforcement and protection of our intellectual property may be expensive, could fail to prevent misappropriation or unauthorized use of our intellectual property, could result in the loss of our ability to enforce one or more patents, and could be adversely affected by changes in patent laws, by laws in certain foreign jurisdictions that may not effectively protect our intellectual property and by ineffective enforcement of laws in such jurisdictions.

We rely primarily on patent, copyright, trademark and trade secret laws, as well as nondisclosure and confidentiality agreements, international treaties and other methods, to protect our intellectual property, including our patent portfolio. Policing unauthorized use of our products, technologies and intellectual property is difficult and time consuming. The steps we have taken have not always prevented, and we cannot be certain the steps we will take in the future will prevent, the misappropriation or unauthorized use of our products, technologies or intellectual property, particularly in foreign countries where the laws may not protect our rights as fully or as readily as U.S. laws or where the enforcement of such laws may be lacking or ineffective. See also the Risk Factor entitled *"Our business and operations could suffer in the event of security breaches of our information technology systems, or other misappropriation of our technology, intellectual property or other proprietary or confidential information."*

Some industry participants who have a vested interest in devaluing patents in general, or standard-essential patents in particular, have mounted attacks on certain patent systems, increasing the likelihood of changes to established patent laws. In the United States, there is continued discussion regarding potential patent law changes and current and potential future litigation regarding patents, the outcomes of which could be detrimental to our licensing business. The laws in certain foreign countries in which our products are or may be manufactured or sold, including certain countries in Asia, may not protect our intellectual property rights to the same extent as the laws in the United States. We cannot predict with certainty the long-term effects of any potential changes. In addition, we cannot be certain that the laws and policies of any country or the practices of any standards bodies, foreign or domestic, with respect to intellectual property enforcement or licensing or the adoption of standards, will not be changed in the future in a way detrimental to our licensing program or to the sale or use of our products or technologies.

We have had and may in the future have difficulty in certain circumstances in protecting or enforcing our intellectual property and contracts, including collecting royalties for use of our patent portfolio due to, among others: refusal by certain licensees to report and pay all or a portion of the royalties they owe to us; policies or political actions of governments, including trade protection and national security policies; challenges to our licensing practices under competition laws; adoption of mandatory licensing provisions by foreign jurisdictions; failure of foreign courts to recognize and enforce judgments of contract breach and damages issued by courts in the United States; and challenges before competition agencies to our licensing business and the pricing and integration of additional features and functionality into our chipset products. See also the Risk Factors entitled "*Efforts by some OEMs to avoid paying fair and reasonable royalties for the use of our* *intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business*" and "*Our business may suffer as a result of adverse rulings in government investigations or proceedings*."

We have engaged in litigation and arbitration in the past and may need to further litigate or arbitrate in the future to enforce our contract and intellectual property rights, protect our trade secrets or determine the validity and scope of proprietary rights of others. As a result of any such litigation or arbitration, we could lose our ability to enforce one or more patents, portions of our license agreements could be determined to be invalid or unenforceable (which may in turn result in other licensees either not complying with their existing license agreements or initiating litigation or arbitration), license terms (including but not limited to royalty rates for the use of our intellectual property) could be imposed that are less favorable to us than existing terms, and we could incur substantial costs. Any action we take to enforce our contract or intellectual property rights could be costly and could absorb significant management time and attention, which, in turn, could negatively impact our results of operations and cash flows. Further, even a positive resolution to our enforcement efforts may take time to conclude, which may reduce our revenues and cash resources available for other purposes, such as research and development, in the periods prior to conclusion.

Additionally, although our license agreements provide us with the right to audit the books and records of licensees, audits can be expensive, time consuming, incomplete and subject to dispute. Further, certain licensees may not comply with the obligation to provide full access to their books and records. To the extent we do not aggressively enforce our rights under our license agreements, licensees may not comply with their existing license agreements, and to the extent we do not aggressively pursue unlicensed companies to enter into license agreements with us for their use of our intellectual property, other unlicensed companies may not enter into license agreements. Similarly, we provide access to certain of our intellectual property and proprietary and confidential business information to our direct and indirect customers and licensees, who have in the past and may in the future wrongfully use such intellectual property and information or wrongfully disclose such intellectual property and information to third parties, including our competitors. See also the Risk Factor entitled "*Efforts by some OEMs to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business*."

Claims by other companies that we infringe their intellectual property could adversely affect our business.

From time to time, companies have asserted, and may again assert, patent, copyright and other intellectual property claims against our products or products using our technologies or other technologies used in our industry. These claims have resulted and may again result in our involvement in litigation. We may not prevail in such litigation given, among other factors, the complex technical issues and inherent uncertainties in intellectual property litigation. If any of our products were found to infringe another company's intellectual property, we could be subject to an injunction or be required to redesign our products, or to license such intellectual property or pay damages or other compensation to such other company (any of which could be costly). If we are unable to redesign our products, license such intellectual property used in our products or otherwise distribute our products (e.g., through a licensed supplier), we could be prohibited from making and selling our products. Similarly, our suppliers could be found to infringe another company's intellectual property, and such suppliers could then be enjoined from providing products or services to us.

In any potential dispute involving us and another company's patents or other intellectual property, our chipset foundries, semiconductor assembly and test providers and customers could also become the targets of litigation. We are contingently liable under certain product sales, services, license and other agreements to indemnify certain customers, chipset foundries and semiconductor assembly and test service providers against certain types of liability and damages arising from qualifying claims of patent infringement by products sold by us, or by intellectual property provided by us to our chipset foundries and semiconductor assembly and test service providers. Reimbursements under indemnification arrangements could have an adverse effect on our results of operations and cash flows. Furthermore, any such litigation could severely disrupt the supply of our products and the businesses of our chipset customers and their customers, which in turn could harm our relationships with them and could result in a decline in our chipset sales or a reduction in our licensees' sales, causing a corresponding decline in our chipset or licensing revenues. Any claims, regardless of their merit, could be time consuming to address, result in costly litigation, divert the efforts of our technical and management personnel or cause product release or shipment delays, any of which could have an adverse effect on our results of operations and cash flows.

We may continue to be involved in litigation and may have to appear in front of administrative bodies (such as the United States International Trade Commission) to defend against patent assertions against our products by companies, some of whom are attempting to gain competitive advantage or leverage in licensing negotiations. We may not be successful in such proceedings, and if we are not, the range of possible outcomes is very broad and may include, for example, monetary damages or fines or other orders to pay money, royalty payments, injunctions on the sale of certain of our integrated circuit products (or on the sale of our customers' devices using such products) or the issuance of orders to cease certain conduct or modify our business practices. Further, a governmental body in a particular country or region may assert, and may be successful in imposing, remedies with effects that extend beyond the borders of that country or region. In addition, a negative outcome in any such proceeding could severely disrupt the business of our chipset customers and their wireless operator customers, which in turn could harm our relationships with them and could result in a decline in our chipset sales or a reduction in our licensees' sales to wireless operators, causing corresponding declines in our chipset or licensing revenues.

Certain legal matters, which may include certain claims by other companies that we infringe their intellectual property, are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

Our use of open source software may harm our business.

Certain of our software and our suppliers' software may contain or may be derived from "open source" software, and we have seen, and believe that we will continue to see, an increase in customers requesting that we develop products, including software associated with our integrated circuit products, that incorporate open source software elements and operate in an open source environment, which, under certain open source licenses, may offer accessibility to a portion of our products' source code and may expose our related intellectual property to adverse licensing conditions. Licensing of such software may impose certain obligations on us if we were to distribute derivative works of that software. For example, these obligations may require us to make source code for the derivative works available to our customers in a manner that allows them to make such source code available to their customers or license such derivative works under a particular type of license that is different than what we customarily use to license our software. Furthermore, in the course of product development, we may make contributions to third-party open source projects that could obligate our intellectual property to adverse licensing conditions. For example, to encourage the growth of a software ecosystem that is interoperable with our products, we may need to contribute certain implementations under the open source licensing terms that govern such projects, which may adversely impact our associated intellectual property. Developing open source products, while adequately protecting the intellectual property upon which our licensing program depends, may prove burdensome and time-consuming under certain circumstances, thereby placing us at a competitive disadvantage, and we may not adequately protect our intellectual property. Also, our use and our customers' use of open source software may subject our products and our customers' products to governmental and third-party scrutiny and delays in product certification, which could cause customers to view our products as less desirable than our competitors' products. While we believe we have taken appropriate steps and employ adequate controls to protect our intellectual property, our contributions to and use of open source software presents risks that could have an adverse effect on these and on our business.

RISKS RELATED TO HUMAN CAPITAL MANAGEMENT

We may not be able to attract and retain qualified employees.

Our future success depends upon the continued service of our executive officers and other key management and technical personnel, and on our ability to continue to identify, attract, retain and motivate them. Implementing our business strategy requires specialized engineering and other talent, as our revenues are highly dependent on technological and product innovations. The market for employees in our industry is extremely competitive, and competitors for talent, particularly engineering talent, increasingly attempt to hire, and to varying degrees have been successful in hiring, our employees, including by establishing local offices near our headquarters in San Diego, California. A number of such competitors for talent are significantly larger than us and are able to offer compensation in excess of what we are able to offer. Further, existing immigration laws make it more difficult for us to recruit and retain highly skilled foreign national graduates of universities in the United States, making the pool of available talent even smaller. If we are unable to attract and retain qualified employees, our business may be harmed.

RISKS RELATED TO PRODUCT DEFECTS OR SECURITY VULNERABILITIES

Failures in our products, or in the products of our customers or licensees, including those resulting from security vulnerabilities, defects or errors, could harm our business.

Our products (including related software) are complex and may contain defects, errors or security vulnerabilities, or experience failures or unsatisfactory performance, due to any number of issues, including issues in materials, design, fabrication, packaging and/or use within a system. Further, because of the complexity of our products, defects or errors might only be detected when the products are in use. Development of products in new domains of technology, such as the transition to 5G, and the migration to integrated circuit technologies with smaller geometric feature sizes, increases complexity and adds risk to manufacturing yields and reliability, and increases the likelihood of product defects or errors. Risks associated with product defects, errors or security vulnerabilities are exacerbated by the fact that our customers typically integrate our products into consumer and other devices.

The use of devices containing our products to interact with untrusted systems or otherwise access untrusted content creates a risk of exposing the system hardware and software in those devices to malicious attacks. Security vulnerabilities in our products could expose our customers or end users to hackers or other unscrupulous third parties who develop and deploy viruses, worms and other malicious software programs that could attack our products or those of our customers. While we continue to focus on this issue and take measures to safeguard our products from cybersecurity threats, device capabilities continue to evolve, enabling more elaborate functionality and applications, and increasing the risk of security failures.

Our products may be responsible for critical functions in our customers' products and networks. Failure of our products to perform to specifications, or other product defects, errors or security vulnerabilities, could lead to substantial damage to the products we sell to our customers, the devices into which our products are integrated and to the end users of such devices.

Such defects, errors or security vulnerabilities could give rise to significant costs, including costs related to developing solutions, recalling products, repairing or replacing defective products, writing down defective inventory, or the indemnification clauses in our agreements, and could result in the loss of sales and divert the attention of our engineering personnel from our product development efforts. In addition, defects, errors or security vulnerabilities in our products could result in failure to achieve market acceptance, a loss of design wins, a shifting of business to our competitors, and litigation or regulatory action against us, and could harm our reputation, our relationships with customers and partners and our ability to attract new customers, as well as the perceptions of our brand. Other potential adverse impacts of product defects, errors or security vulnerabilities include shipment delays, write-offs of property, plant and equipment and intangible assets, and losses on unfavorable purchase commitments. In addition, defects, errors or security vulnerabilities in the products of our customers or licensees could cause a delay or decrease in demand for the products into which our products are integrated, and thus for our products.

In addition, the occurrence of defects may give rise to product liability claims, particularly if defects in our products or the products into which they are integrated result in personal injury or death, and could result in significant costs, expenses and losses. If a product liability claim is brought against us, the cost of defending the claim could be significant, and could divert the efforts of our technical and management personnel and harm our business, even if we are successful. We may be named in product liability claims even if there is no evidence that our products caused the damage in question, and even though we may have indemnity from our customers, and such claims could result in significant costs and expenses. Further, our business liability insurance may be inadequate, or future coverage may be unavailable on acceptable terms, which could adversely impact our financial results. The above is exacerbated by the fact that our products may be used, and perform critical functions, in various high-risk applications such as automobiles, including autonomous driver assistance programs; cameras and artificial intelligence, including home and enterprise security; home automation, including smoke and noxious gas detectors; medical condition monitoring; location and asset tracking and management, including wearables for child safety and elderly health; robotics, including public safety drones and autonomous municipality vehicles; and extended reality (XR) for treatment of phobias or PTSD, early detection of disorders or special needs, among others.

Accordingly, defects, errors or security vulnerabilities in our products could have an adverse impact on us, on our customers and the end users of our customers' products. If any of these risks materialize, there could be a material adverse effect on our business, results of operations and financial condition.

GENERAL RISK FACTORS

We operate in the highly cyclical semiconductor industry, which is subject to significant downturns. We are also susceptible to declines in global, regional and local economic conditions generally. Our stock price and financial results are subject to substantial quarterly and annual fluctuations due to these dynamics, among others.

The semiconductor industry is highly cyclical, volatile, subject to downturns and characterized by constant and rapid technological change, price erosion, evolving technical standards, frequent new product introductions, short product life cycles and fluctuations in product supply and demand. Periods of downturns have been characterized by diminished demand for end-user products, high inventory levels, excess or obsolete inventory adjustments, underutilization of manufacturing capacity, changes in revenue mix and erosion of average selling prices. We expect our business to continue to be subject to such cyclical downturns. Consequently, our revenues may decline, and our results of operations and financial condition may be adversely impacted.

A decline in global, regional or local economic conditions or a slow-down in economic growth, particularly in geographic regions with high concentrations of wireless voice and data users or high concentrations of our customers or licensees, could have adverse, wide-ranging effects on our business and financial results, including a decrease in demand for our products and technologies; a decrease in demand for the products and services of our customers or licensees; the inability of our suppliers to deliver on their supply commitments to us, our inability to supply our products to our customers and/or the inability of our customers or licensees to supply their products to end users; the insolvency of key suppliers, customers or licensees; delays in reporting or payments from our customers or licensees; failures by counterparties; and/or negative effects on wireless device inventories. In addition, our customers' and licensees' ability to purchase or pay for our products and intellectual property and network operators' ability to upgrade their wireless networks could be adversely affected, potentially leading to a reduction, cancellation or delay of orders for our products.

Our stock price and financial results have fluctuated in the past and are likely to fluctuate in the future. Factors that may have a significant impact on the market price of our stock and our financial results include those identified above and throughout this Risk Factors section; volatility of the stock market in general and technology and semiconductor companies in particular; announcements concerning us, our suppliers, our competitors or our customers or licensees; and variations between our actual financial results or guidance and expectations of securities analysts or investors, among others. In the past, securities class action litigation has been brought against companies following periods of volatility in the market price of their securities, among other reasons. We are and may in the future be the target of securities litigation. Securities litigation could result in substantial uninsured costs and divert management's attention and our resources. Certain legal matters, including certain securities litigation brought against us, are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

Our business may suffer due to the impact of, or our failure to comply with, the various existing, new or amended laws, regulations, policies or standards to which we are subject.

Our business and products, and those of our customers and licensees, are subject to various laws, rules and regulations globally as well as government policies and the specifications of international, national and regional communications standards bodies (collectively, Regulations). Compliance with, or changes in the interpretation of, existing Regulations, changes in the oversight of our activities by governments or standards bodies, or rulings in court, regulatory, administrative or other proceedings relating to such Regulations, including, among others, Regulations affecting patent licensing practices; antitrust, competition and competitive business practices; the flow of funds out of certain countries (e.g., China); cybersecurity; import and export regulations such as the U.S. Export Administration Regulations administered by the U.S. Department of Commerce; protection of intellectual property; trade and trade protection including tariffs; foreign policy and national security; environmental protection, health and safety; supply chain, responsible sourcing, including the use of conflict minerals, and human rights; spectrum availability and license issuance; adoption of standards; taxation; privacy and data protection; labor, employment and human capital; corporate governance; public disclosure; or business conduct, could have an adverse effect on our business and results of operations. See also the Risk Factors entitled "*Our business may suffer as a result of adverse rulings in government investigations or proceedings,"* "*Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations," "A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions,"* "*There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model, environmental compliance and liability, issues related to climate change, exposure to natural disasters, timely supply of equipment and materials, and various manufacturing issues," and "Tax liabilities could adversely affect our results of operations."*

Regulations are complex and changing (which may create uncertainty regarding compliance), are subject to varying interpretations, and their application in practice may evolve over time. As a result, our efforts to comply with Regulations may fail, particularly if there is ambiguity as to how they should be applied in practice. Failure to comply with any Regulation may adversely affect our business, results of operations and cash flows. New Regulations or evolving interpretations thereof, may cause us to incur higher costs as we revise current practices, policies or procedures and may divert management time and attention to compliance activities.

There are risks associated with our debt.

Our outstanding debt and any additional debt we incur may have negative consequences on our business, including, among others: requiring us to use cash to pay the principal of and interest on our debt, thereby reducing the amount of cash available for other purposes; limiting our ability to obtain additional financing for working capital, capital expenditures, acquisitions, stock repurchases, dividends, general corporate or other purposes; and limiting our flexibility in planning for, or reacting to, changes in our business, industries or the market. Our ability to make payments of principal and interest on our indebtedness depends upon our future performance, which is subject to economic and political conditions, industry cycles and financial, business and other factors, many of which are beyond our control. If we are unable to generate sufficient cash flow from operations to service our debt, we may be required to, among other things: refinance or restructure all or a portion of our debt; reduce or delay planned capital or operating expenditures; reduce, suspend or eliminate our dividend payments and/or our stock repurchase program; or sell selected assets. Such measures might not be sufficient to enable us to service our debt. In addition, any such refinancing, restructuring or sale of assets might not be available on economically favorable terms or at all, and if prevailing interest rates at the time of any such refinancing or restructuring are higher than our current rates, interest expense related to such refinancing or restructuring would increase. Further, if there are adverse changes in the ratings assigned to our debt securities by credit rating agencies, our borrowing costs, our ability to access debt in the future and the terms of such debt could be adversely affected.

Tax liabilities could adversely affect our results of operations.

We are subject to income taxes in the United States and numerous foreign jurisdictions. Significant judgment is required in determining our provision for income taxes. We regularly are subject to examination of our tax returns and reports by taxing authorities in the United States federal jurisdiction and various state and foreign jurisdictions, most notably in countries where we earn a routine return and the tax authorities believe substantial value-add activities are performed. Although we believe that our tax estimates are reasonable, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provisions and accruals. In such case, our income tax provision, results of operations and cash flows in the period or periods in which that determination is made could be negatively affected.

Tax rules may change in a manner that adversely affects our future reported results of operations or the way we conduct our business. In response to the 2017 Tax Cuts and Jobs Act and to better align our profits with our activities, we implemented certain restructuring in fiscal 2018 and 2019. After our restructuring, most of our income is taxable in the United States with a significant portion qualifying for preferential treatment as FDII (foreign-derived intangible income). Beginning in fiscal 2027, the effective tax rate for FDII increases from 13% to 16%. Further, if U.S. tax rates increase or the FDII deduction is eliminated or reduced, our provision for income taxes, results of operations and cash flows would be adversely affected. Also, if our customers move manufacturing operations to the United States, our FDII deduction will be reduced.

We have tax incentives in Singapore that require we meet specified employment and other criteria. Although our profit in Singapore has declined as a result of our 2018 restructuring, failure to meet these incentive requirements through March 2022 could result in a retroactive Singapore tax increase for 2017 and 2018.

Further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project that was undertaken by the Organization for Economic Co-operation and Development (OECD). The OECD, which represents a coalition of member countries, recommended changes to numerous long-standing tax principles related to transfer pricing and continues to develop new proposals including allocating greater taxing rights to countries where customers are located and establishing a minimum tax on global income. These changes, as adopted by countries, may increase tax uncertainty and may adversely affect our provision for income taxes, results of operations and cash flows. Partially to address BEPS, we moved certain intellectual property from Singapore to the United States as part of our 2018 and 2019 restructuring.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

At September 27, 2020, we occupied the following facilities (square footage in millions):

	United States	Other Countries	Total
Owned facilities	4.4	0.4	4.8
Leased facilities	0.9	6.2	7.1
Total	5.3	6.6	11.9

Our headquarters and certain research and development, manufacturing and network management hub operations are located in San Diego, California. Additionally, our QCT segment's non-United States headquarters is located in Singapore. We also operate leased manufacturing facilities in Germany, China and Singapore. We also own and lease properties around the world for use as sales and administrative offices and research and development centers, primarily in the United States, India and China. Our facility leases expire at varying dates through 2032, not including renewals that are at our option. Several other owned and leased facilities are under construction totaling approximately 750 thousand additional square feet, primarily related to the construction of new facilities in India and Taiwan.

We do not identify or allocate facilities by operating segment. In response to the COVID-19 pandemic, we modified certain of our workforce practices, such as having the vast majority of our employees work from home. Such changes have impacted the physical utilization of certain of our non-manufacturing facilities; however, we believe that collectively our facilities are suitable and adequate for our present purposes. We continue to assess the impacts of COVID-19 on the suitability, adequacy, productive capacity and utilization of our existing principal physical properties, and we are in the process of evaluating the future state of our workforce practices, which may result in changes to our physical property needs. Additional information on our additional capital requirements is provided in this Annual Report in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in the "Liquidity and Capital Resources" section under the heading "Additional Capital Requirements." Additional information on net property, plant and equipment by geography is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information."

Item 3. Legal and Regulatory Proceedings

Information regarding legal and regulatory proceedings is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We are also engaged in numerous other legal actions arising in the ordinary course of our business (such as, for example, proceedings relating to employment matters or the initiation or defense of proceedings relating to intellectual property rights) and, while there can be no assurance, we believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information and Dividends

Our common stock is traded on the NASDAQ Global Select Market (NASDAQ) under the symbol “QCOM.” At November 2, 2020, there were 6,609 holders of record of our common stock.

We intend to continue to pay quarterly dividends, subject to capital availability and our view that cash dividends are in the best interests of our stockholders. Future dividends may be affected by, among other items, our views on potential future capital availability and requirements, including those relating to research and development, creation and expansion of sales and distribution channels, investments and acquisitions, legal risks, withholding of payments by one or more of our significant licensees and/or customers, fines by government agencies and/or adverse rulings by a court or arbitrator in a legal matter, stock repurchase programs, debt issuances, changes in federal and state income tax law, trade and/or national security protection policies, volatility in economies and financial markets globally, including as impacted by the COVID-19 pandemic, and changes to our business model.

Share-Based Compensation

We primarily issue restricted stock units under our equity compensation plans, which are part of a broad-based, long-term retention program that is intended to attract and retain talented employees and directors and align stockholder and employee interests.

Our 2016 Long-Term Incentive Plan (2016 Plan) provides for the grant of incentive and nonstatutory stock options, stock appreciation rights, restricted stock, unrestricted stock, restricted stock units, performance units, performance shares, deferred compensation awards and other stock-based awards. We primarily grant restricted stock units, which generally vest over periods of three years from the date of grant. Our Board of Directors may amend or terminate the 2016 Plan at any time, with certain amendments also requiring stockholder approval.

Additional information regarding our share-based compensation plans and plan activity for fiscal 2020, 2019 and 2018 is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 5. Employee Benefit Plans.”

Issuer Purchases of Equity Securities

On July 26, 2018, we announced a repurchase program authorizing us to repurchase up to $30 billion of our common stock. We did not repurchase any of our shares in the fourth quarter of fiscal 2020. At September 27, 2020, $4.6 billion remained authorized for repurchase. In the first quarter of fiscal 2021, we resumed stock repurchases under the stock repurchase program, which we had suspended in the third quarter of fiscal 2020 in light of COVID-19 to maintain our financial liquidity position and flexibility. The stock repurchase program has no expiration date. Shares withheld to satisfy statutory tax withholding requirements related to the vesting of share-based awards are not issued or considered stock repurchases under our stock repurchase program.

Item 6. Selected Financial Data

The following data should be read in conjunction with the annual consolidated financial statements, related notes and other financial information appearing elsewhere herein.

	Years Ended (1)				
	September 27, 2020	September 29, 2019	September 30, 2018	September 24, 2017	September 25, 2016
	(In millions, except per share data)				
Statement of Operations Data:					
Revenues (2)	$ 23,531	$ 24,273	$ 22,611	$ 22,258	$ 23,554
Operating income (2)	6,255	7,667	621	2,581	6,495
Net income (loss) attributable to Qualcomm (2)	5,198	4,386	(4,964)	2,445	5,705
Per Share Data:					
Basic earnings (loss) per share attributable to Qualcomm	$ 4.58	$ 3.63	$ (3.39)	$ 1.66	$ 3.84
Diluted earnings (loss) per share attributable to Qualcomm	4.52	3.59	(3.39)	1.64	3.81
Dividends per share announced	2.54	2.48	2.38	2.20	2.02
Balance Sheet Data:					
Cash, cash equivalents and marketable securities (3)	$ 11,249	$ 12,296	$ 12,123	$ 38,578	$ 32,350
Total assets (3)	35,594	32,957	32,718	65,498	52,359
Short-term debt (4)	500	2,496	1,005	2,495	1,749
Long-term debt (5)	15,226	13,437	15,365	19,398	10,008
Other long-term liabilities (6)	4,858	4,516	3,537	2,432	895
Total stockholders' equity (3)	6,077	4,909	807	30,725	31,768

(1) Our fiscal year ends on the last Sunday in September. The fiscal years ended September 27, 2020, September 29, 2019, September 24, 2017 and September 25, 2016 each included 52 weeks. The fiscal year ended September 30, 2018 included 53 weeks.

(2) Revenues in fiscal 2020 included $1.8 billion resulting from the settlement with Huawei. Net income for fiscal 2020 was impacted by $405 million in non-marketable investment impairments.

Revenues in fiscal 2019 included $4.7 billion resulting from the settlement with Apple and its contract manufacturers. Revenues in fiscal 2019 also reflected the impact of the adoption of the new revenue recognition guidance in the first quarter of fiscal 2019. Operating income in fiscal 2019 was impacted by a $275 million charge attributed to a fine imposed by the European Commission (EC) and $213 million in net charges related to our cost plan that concluded in fiscal 2019 (Cost Plan). Additionally, net income for fiscal 2019 was impacted by a $2.5 billion charge to income tax expense resulting from the derecognition of a deferred tax asset related to the distributed intellectual property and a tax benefit of $570 million due to establishing new U.S. net deferred tax assets from making certain check-the-box elections.

Revenues in fiscal 2018 were negatively impacted by our prior dispute with Apple and its contract manufacturers, partially offset by $600 million paid under an interim agreement with Huawei. Operating income in fiscal 2018 was further impacted by a $2.0 billion charge related to a fee in connection with the termination of a purchase agreement to acquire NXP Semiconductors N.V., a $1.2 billion charge related to a fine imposed by the EC and $629 million in charges related to our Cost Plan, partially offset by a $676 million benefit resulting from a settlement with the Taiwan Fair Trade Commission (TFTC). Additionally, net loss for fiscal 2018 was impacted by a $5.7 billion charge related to the Tax Legislation.

Revenues in fiscal 2017 were negatively impacted by actions taken by Apple and its contract manufacturers and Huawei, who did not fully report or fully pay royalties due in the last three quarters of fiscal 2017, as well as a $940 million reduction to revenues recorded related to the BlackBerry arbitration. Operating income was further impacted by $927 million and $778 million in charges related to the fines imposed by the Korea Fair Trade Commission and the TFTC, respectively.

(3) In the fourth quarter of fiscal 2018, we announced a stock repurchase program authorizing us to repurchase up to $30 billion of our common stock. Under this program, we completed a tender offer and paid an aggregate of $5.1 billion to repurchase shares of our common stock and entered into three accelerated share repurchase agreements to repurchase an aggregate of $16.0 billion of our common stock, resulting in significant reductions to the balances of our cash, cash equivalents and marketable securities, total assets and total stockholders’ equity.

(4) Short-term debt was comprised of outstanding commercial paper and, in fiscal 2019 and 2017, the current portion of long-term debt.

(5) Long-term debt was comprised of floating- and fixed-rate notes.

(6) Other long-term liabilities in this balance sheet data includes noncurrent income taxes payable and noncurrent liabilities for uncertain tax positions and excludes unearned revenues.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

In addition to historical information, the following discussion contains forward-looking statements that are subject to risks and uncertainties. Actual results may differ materially from those referred to herein due to a number of factors, including but not limited to risks described in "Part I, Item 1A. Risk Factors" and elsewhere in this Annual Report.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included in "Part II, Item 8. Financial Statements and Supplementary Data" of this Annual Report.

Fiscal 2020 Overview and Other Recent Events

Revenues were $23.5 billion, a decrease of 3% compared to revenues of $24.3 billion in fiscal 2019, with net income of $5.2 billion, an increase of 19% compared to net income of $4.4 billion in fiscal 2019. Highlights and other events from fiscal 2020 and other recent events included:

- The rapid, global spread of COVID-19 has negatively impacted consumer demand for certain devices that incorporate our products and intellectual property, which negatively impacted our business and results of operations in fiscal 2020. The impact of the COVID-19 pandemic on sales of devices that incorporate our products and intellectual property was most significant in the March 2020 and June 2020 quarters. The impact of COVID-19 on our ability to fulfill customer orders has been minimal. Workforce changes that we implemented in the second quarter of fiscal 2020 remained in effect throughout fiscal 2020.
- In July 2020, we entered into a settlement agreement with Huawei to resolve our prior dispute related to our license agreement that expired on December 31, 2019. We also entered into a new long-term, global patent license agreement that contains a cross license granting rights to certain of Huawei's patents and applies to sales of certain wireless products by Huawei beginning on January 1, 2020. Amounts due under the settlement agreement (which are incremental to the $1.2 billion previously paid under two interim agreements) are to be paid in installments by the end of June 2021 in accordance with an agreed upon payment schedule. We recorded revenues of $1.8 billion in fiscal 2020, which were not allocated to our segment results, related to the amounts due from Huawei under the settlement agreement and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent license agreement. In the fourth quarter of fiscal 2020, Huawei paid the first installment under the settlement agreement and the royalties due for the March 2020 and June 2020 quarters.
- QCT results in fiscal 2020 benefited from an increase in demand for 5G and IoT products, partially offset by the negative impact of COVID-19. Additionally, in the second half of fiscal 2020, QCT began shipments under the multi-year chipset supply agreement with Apple to support 2020 iPhone product launches.
- QTL results in fiscal 2020 benefited from the inclusion of a full year of royalties from Apple (as a result of the settlement with Apple and its contract manufacturers in April 2019) and an estimate of royalties due from Huawei for sales made in the September 2020 quarter, partially offset by the negative impact of COVID-19.
- We entered into new long-term, world-wide patent license agreements with Guangdong OPPO Mobile Telecommunications Corp., Ltd. (Oppo) and BBK Communication Technology Co., Ltd. (vivo) (who were previously disclosed as two key Chinese licensees), effective as of April 1, 2020. We also reached agreements with these licensees to provide for scheduled payments of amounts due under the license agreements that expired on March 31, 2020 and for which certain of such amounts for prior periods were withheld while good faith negotiations occurred. Oppo and vivo paid all such amounts due under the settlement agreements by the end of September 2020.
- In May 2019, in *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated*, the district court issued an Order ruling against us and imposing certain injunctive relief. On August 11, 2020, on appeal, the Ninth Circuit reversed the district court's judgment, vacated its injunction and vacated its partial grant of summary judgment. On September 25, 2020, the FTC filed a Petition for Rehearing *En Banc*. On October 28, 2020, the Ninth Circuit denied the FTC's petition.
- In fiscal 2020, we recorded $405 million in non-marketable investment impairments, a portion of which was due in part from the impacts of COVID-19 on certain of our investees.

Our Business and Operating Segments

We develop and commercialize foundational technologies and products used in mobile devices and other wireless products. We derive revenues principally from sales of integrated circuit products and licensing our intellectual property, including patents and other rights.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm

Technology Licensing) licensing business. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including QGOV (Qualcomm Government Technologies), our cloud AI inference processing initiative and other technology and service initiatives.

Further information regarding our business and operating segments is provided in "Part I, Item 1. Business" of this Annual Report.

Seasonality. Many of our products and much of our intellectual property are incorporated into consumer wireless devices, which are subject to seasonality and other fluctuations in demand. Our revenues have historically fluctuated based on consumer demand for devices, as well as on the timing of customer/licensee device launches and/or innovation cycles (such as the transition to the next generation of wireless technologies). This has resulted in fluctuations in QCT revenues in advance of and during device launches incorporating our products and in QTL revenues when the related royalties were recognized, which prior to fiscal 2019 was when licensees reported their sales and beginning in fiscal 2019 when the licensees' sales occurred. Our historical trends were impacted by our prior dispute with Apple and its contract manufacturers (which was settled in April 2019). Looking forward, we expect QCT revenues to be impacted by seasonal trends related to product launch timing for sales made to Apple under our multi-year chipset supply agreement. These trends may or may not continue in the future and have been impacted by the decline in consumer demand resulting from COVID-19. Further, the trends for QTL have been, and may in the future be, impacted by disputes and/or resolutions with licensees and/or governmental investigations or proceedings, including the lawsuit filed against us by the FTC.

Results of Operations

Revenues (in millions)

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Equipment and services	$ 16,298	$ 14,611	$ 17,400	$ 1,687	$ (2,789)
Licensing	7,233	9,662	5,211	(2,429)	4,451
	$ 23,531	$ 24,273	$ 22,611	$ (742)	$ 1,662

2020 vs. 2019
The decrease in revenues in fiscal 2020 was primarily due to:
- \- $4.7 billion in licensing revenues recorded in the third quarter of fiscal 2019 resulting from the settlement with Apple and its contract manufacturers (which were not allocated to our segment results)
- \- $116 million in lower equipment and services revenues from our QSI segment
- \+ $1.8 billion in licensing revenues from Huawei recorded in the fourth quarter of fiscal 2020 resulting from amounts due under the settlement agreement and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent license agreement (which were not allocated to our segment results)
- \+ $1.8 billion in higher equipment and services revenues from our QCT segment
- \+ $437 million in higher licensing revenues from our QTL segment

2019 vs. 2018
The increase in revenues in fiscal 2019 was primarily due to:
- \+ $4.7 billion in licensing revenues recorded in the third quarter of fiscal 2019 resulting from the settlement with Apple and its contract manufacturers
- \- $2.7 billion in lower equipment and services revenues from our QCT segment
- \- $451 million in lower licensing revenues from our QTL segment

Costs and Expenses (in millions, except percentages)

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Cost of revenues	$ 9,255	$ 8,599	$ 10,244	$ 656	$ (1,645)
Gross margin	61 %	65 %	55 %		

2020 vs. 2019
The decrease in margin percentage in fiscal 2020 was primarily due to:
- \- lower licensing revenues resulting from the settlement with Apple and its contract manufacturers in fiscal 2019

- higher licensing revenues from Huawei recorded in fiscal 2020 resulting from amounts due under the settlement agreement and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent license agreement

2019 vs. 2018

The increase in margin percentage in fiscal 2019 was primarily due to:

- higher licensing revenues resulting from the settlement with Apple and its contract manufacturers in fiscal 2019

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Research and development	$ 5,975	$ 5,398	$ 5,625	$ 577	$ (227)
% of revenues	25 %	22 %	25 %		

2020 vs. 2019
The increase in research and development expenses in fiscal 2020 was primarily due to:

+ $426 million increase driven by higher costs related to the development of wireless and integrated circuit technologies, including 5G and application processor technologies, partially offset by lower employee cash incentive program costs
+ $148 million in higher share-based compensation expense

2019 vs. 2018
The decrease in research and development expenses in fiscal 2019 was primarily due to:

- $221 million decrease primarily driven by actions taken under our Cost Plan that concluded in fiscal 2019, partially offset by higher share-based compensation expense and higher employee cash incentive program costs

In fiscal 2018, all of the costs ($474 million) related to pre-commercial research and development of 5G technologies were included in unallocated corporate research and development expenses. Beginning in fiscal 2019, all research and development costs associated with 5G technologies were included in segment results. Additionally, beginning in fiscal 2019, certain research and development costs associated with early research and development that were historically included in our QCT segment were allocated to our QTL segment. The net effect of these changes negatively impacted QTL's EBT by $489 million in fiscal 2019 and positively impacted QCT's EBT by $160 million in fiscal 2019.

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Selling, general and administrative	$ 2,074	$ 2,195	$ 2,986	$ (121)	$ (791)
% of revenues	9 %	9 %	13 %		

2020 vs. 2019
The decrease in selling, general and administrative expenses in fiscal 2020 was primarily due to:

- $167 million in lower litigation costs, primarily resulting from the settlement of our prior dispute with Apple and its contract manufacturers in April 2019
+ $44 million in higher patent costs, primarily resulting from 5G patent filings

2019 vs. 2018
The decrease in selling, general and administrative expenses in fiscal 2019 was primarily due to:

- $287 million in lower professional fees and costs, primarily driven by Broadcom's withdrawn takeover proposal in fiscal 2018 and our then proposed acquisition of NXP Semiconductors N.V. (NXP) in fiscal 2018
- $235 million in lower litigation costs, primarily resulting from the settlement of our prior dispute with Apple and its contract manufacturers and the end of the District Court trial in the lawsuit filed against us by the FTC
- $162 million in lower employee-related expenses, primarily driven by actions taken under our Cost Plan
- $75 million in lower sales and marketing expenses, primarily driven by actions taken under our Cost Plan

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Other	$ (28)	$ 414	$ 3,135	$ (442)	$ (2,721)

2020
Other income in fiscal 2020 consisted of $28 million in gains related to a favorable legal settlement.

2019

Other expenses in fiscal 2019 consisted of:

- + $275 million charge related to a fine imposed by the European Commission (EC) related to the Icera complaint
- + $213 million in net charges related to our Cost Plan
- - $43 million gain due to the partial recovery of a fine imposed in fiscal 2009 resulting from our appeal of the Korea Fair Trade Commission (KFTC) decision
- - $31 million gain related to a favorable legal settlement

2018

Other expenses in fiscal 2018 consisted of:

- + $2.0 billion charge related to a fee in connection with the termination of the purchase agreement to acquire NXP
- + $1.2 billion charge related to a fine imposed by the EC
- + $629 million in restructuring and restructuring-related charges related to our Cost Plan
- - $676 million benefit related to the settlement of the Taiwan Fair Trade Commission (TFTC) investigation

Interest Expense and Investment and Other Income, Net (in millions)

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Interest expense	$ 602	$ 627	$ 768	$ (25)	$ (141)
Investment and other income, net					
Interest and dividend income	$ 156	$ 300	$ 611	$ (144)	$ (311)
Net gains on marketable securities	198	295	21	(97)	274
Net gains on other investments	108	68	83	40	(15)
Net gains on deferred compensation plan assets	47	9	34	38	(25)
Impairment losses on other investments	(405)	(135)	(75)	(270)	(60)
Net gains (losses) on derivative instruments	8	(14)	(27)	22	13
Equity in net losses of investees	(21)	(93)	(145)	72	52
Net (losses) gains on foreign currency transactions	(25)	11	37	(36)	(26)
	$ 66	$ 441	$ 539	$ (375)	$ (98)

The increase in impairment losses in fiscal 2020 was due in part to the impact COVID-19 had on certain of our investees. A significant portion of the impairment losses related to our investment in OneWeb who filed for bankruptcy in the second quarter of fiscal 2020. The decrease in interest and dividend income in fiscal 2020 was primarily driven by lower interest rates earned on interest-bearing securities. The decrease in net gains on marketable securities in fiscal 2020 was primarily driven by prior year gains resulting from the initial public offering of certain non-marketable equity investments in fiscal 2019.

In the fourth quarter of fiscal 2018, we implemented a stock repurchase program to repurchase up to $30 billion of our outstanding common stock. Stock repurchases made under this program significantly reduced the amount of our cash, cash equivalents and marketable securities, resulting in a decrease to interest and dividend income in fiscal 2019. The increase in net gains on marketable securities in fiscal 2019 was primarily driven by gains resulting from the initial public offering of certain non-marketable equity investments.

Income Tax Expense (in millions, except percentages)

The following table summarizes the primary factors that caused our annual tax provision to differ from the expected income tax provision at the U.S. federal statutory rate:

	2020	2019	2018
Expected income tax provision at federal statutory tax rate	$ 1,201	$ 1,571	$ 97
State income tax provision, net of federal benefit	7	10	2
Benefit from foreign-derived intangible income (FDII) deduction	(381)	(419)	—
Benefit related to the research and development tax credit	(125)	(110)	(136)
Excess tax benefit associated with share-based awards	(83)	(27)	(20)
Benefit from foreign income taxed at other than U.S. rates	(11)	(54)	(834)
Derecognition of deferred tax asset on distributed intellectual property	—	2,472	—
Benefit from establishing new U.S. net deferred tax assets	—	(570)	—
Nondeductible charges (reversals) related to the EC, KFTC and TFTC investigations	—	51	(119)
Toll Charge from U.S. tax reform	—	—	5,236
Valuation allowance on deferred tax asset related to the NXP termination fee	—	—	494
Remeasurement of deferred taxes due to changes in the statutory rate due to U.S. tax reform	—	—	443
Other	(87)	171	193
Income tax expense	$ 521	$ 3,095	$ 5,356
Effective tax rate	9 %	41 %	N/M

N/M - Not meaningful

The 2017 Tax Cuts and Jobs Act (the Tax Legislation) was enacted in fiscal 2018, which, among other things, lowered the corporate income tax rate to 21%, and as a fiscal-year taxpayer, certain provisions of the Tax Legislation became effective for us at the beginning of fiscal 2019, including FDII (foreign-derived intangible income). In response to the Tax Legislation and to better align our profits with our activities, we implemented certain tax restructuring in fiscal 2018 and 2019. As a result, beginning in fiscal 2019, substantially all of our income is in the U.S., of which a significant portion qualifies for preferential treatment as FDII at a 13% effective tax rate. Our annual effective tax rate for fiscal 2018 reflected a blended federal statutory rate of approximately 25%.

In the fourth quarter of fiscal 2020, the United States Treasury Department issued final regulations on deductions for FDII, which are retroactive to fiscal 2019. As a result of these regulations, our fiscal 2020 annual effective tax rate increased by approximately 1%. In the first quarter of fiscal 2021, the United States Treasury Department issued final regulations on the foreign tax credit, which we anticipate will adversely affect our effective tax rate. The impact of these regulations, which are retroactive to fiscal 2019, has not been included in our fiscal 2020 effective tax rate. While we continue to evaluate these new regulations, we currently do not expect the adverse impact to fiscal 2019 and 2020 to be significant.

As a result of the Tax Legislation, in fiscal 2019, several of our foreign subsidiaries made tax elections to be treated as U.S. branches for federal income tax purposes (commonly referred to as “check-the-box” elections) effective beginning in fiscal 2018 and 2019. As a result of making these check-the-box elections, we recorded a tax benefit of $570 million in fiscal 2019. Additionally, in fiscal 2019, the United States Treasury Department issued new temporary regulations that resulted in a change to the deductibility of dividend income received by a U.S. stockholder from a foreign corporation. As a result of this change, pursuant to an agreement with the Internal Revenue Service, we relinquished the federal tax basis step-up of intellectual property that was distributed in fiscal 2018 by one of our foreign subsidiaries to a U.S. subsidiary. Therefore, the related deferred tax asset was derecognized, resulting in a $2.5 billion charge to income tax expense in fiscal 2019.

In fiscal 2018, as a result of the Tax Legislation, we recorded a charge of $5.7 billion to income tax expense, comprised of $5.2 billion related to the estimated one-time repatriation tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (the Toll Charge) and $438 million resulting from the remeasurement of U.S. deferred tax assets and liabilities that existed at the end of fiscal 2017 at a lower enacted corporate income tax rate, which included a $135 million tax benefit in fiscal 2018 related to the remeasurement of a U.S. deferred tax liability that was established as a result of a change in one of our positions due to the Tax Legislation.

Unrecognized tax benefits were $1.9 billion and $1.7 billion at September 27, 2020 and September 29, 2019, respectively. The increase in unrecognized tax benefits in fiscal 2020 was primarily due to our decision in fiscal 2019 to request a refund of Korean withholding taxes as licensees in Korea continue to withhold taxes on payments due under their licensing agreements at a rate higher than we believe is owed (which had an insignificant impact to our income tax provision). If successful, the refund will result in a corresponding reduction in U.S. foreign tax credits. We are subject to income taxes in the United States and numerous foreign jurisdictions and are currently under examination by various tax authorities worldwide, primarily related to transfer pricing. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. As of September 27, 2020, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Segment Results

The following should be read in conjunction with the fiscal 2020, 2019 and 2018 results of operations for each reportable segment included in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information."

QCT Segment (in millions, except percentages)

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Revenues					
Equipment and services	$ 16,143	$ 14,318	$ 17,060	$ 1,825	$ (2,742)
Licensing	350	321	222	29	99
Total revenues	$ 16,493	$ 14,639	$ 17,282	$ 1,854	$ (2,643)
EBT (1)	$ 2,763	$ 2,143	$ 2,966	$ 620	$ (823)
EBT as a % of revenues	17 %	15 %	17 %	2 %	(2 %)

(1) Earnings (loss) before taxes.

Equipment and services revenues are predominantly related to sales of products used in mobile devices and mostly relate to sales of Mobile Station Modem (MSM™), radio frequency (RF), power management (PM) and wireless connectivity integrated chipsets. MSM integrated circuits include our stand-alone Mobile Data Modems and Snapdragon platforms, which include processors and modems. Approximately 575 million, 650 million and 855 million MSM integrated circuits were sold during fiscal 2020, 2019 and 2018, respectively. Through fiscal 2020, we provided the volume of MSM integrated circuit shipments to allow management and investors to, in part, evaluate, assess and benchmark our QCT segment's performance. Beginning in fiscal 2021, we will no longer provide MSM integrated circuit shipments since such measure is becoming increasingly less meaningful in understanding and evaluating the performance of our QCT segment, which can be impacted by other factors including changes in mix and average selling price of our MSM integrated circuits and revenues generated from products other than MSM integrated circuits, such as RFFE products, among others.

2020 vs. 2019

The increase in QCT equipment and services revenues was primarily due to:

- \+ $1.6 billion in higher revenues per MSM and accompanying RF, PM and wireless connectivity chipset shipments, primarily driven by a favorable mix due to an increase in demand for 5G products
- \+ $864 million in higher RFFE product revenues, primarily driven by an increase in demand for 5G products
- \- $764 million in lower MSM and accompanying chipset shipments, primarily driven by a decrease in demand due to COVID-19, lower legacy MDM sales to Apple and lower sales to Huawei, partially offset by an increase in shipments to Apple under the multi-year chipset supply agreement and an increase in demand for IoT products

QCT EBT as a percentage of revenues increased in fiscal 2020 primarily due to:

- \+ higher revenues and gross margin, primarily driven by a favorable shift in product mix due to an increase in demand for 5G products
- \- higher operating expenses, primarily driven by higher research and development costs

QCT accounts receivable increased by 53% in fiscal 2020 from $908 million to $1.39 billion, primarily driven by an increase in revenues. QCT inventories increased by 86% in fiscal 2020 from $1.40 billion to $2.60 billion, primarily driven by the ramp in 5G demand.

2019 vs. 2018

The decrease in QCT equipment and services revenues was primarily due to:

- \- $2.7 billion in lower MSM and accompanying unit shipments, primarily driven by lower modem sales to Apple and a decline in demand from OEMs in China

- $515 million in lower connectivity product revenues, primarily driven by a decline in demand for Wi-Fi and Bluetooth products from OEMs in China
+ $552 million in higher revenues per MSM and accompanying unit shipment, primarily driven by a favorable shift in mix related to our premium-tier products

QCT EBT as a percentage of revenues decreased in fiscal 2019 primarily due to:
- lower QCT revenues

+ decrease in operating expenses, primarily driven by a decrease in the amount of research and development expense allocated to QCT in fiscal 2019 and actions under our Cost Plan

QTL Segment (in millions, except percentages)

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Licensing revenues	$ 5,028	$ 4,591	$ 5,042	$ 437	$ (451)
EBT	$ 3,442	$ 2,954	$ 3,404	$ 488	$ (450)
EBT as a % of revenues	68 %	64 %	68 %	4 %	(4 %)

QTL results in fiscal 2020 and fiscal 2019 reflected the adoption of new revenue recognition guidance that requires us to estimate and recognize QTL royalties in the period in which the associated sales occur, resulting in an acceleration of royalty revenues by one quarter as compared to fiscal 2018. QTL results in fiscal 2018 have not been adjusted for the adoption of the new accounting guidance.

As a result of the settlement with Apple and its contract manufacturers in April 2019, QTL results for fiscal 2020 and the second half of fiscal 2019 included royalties from Apple and its contract manufactures. Revenues in the first six months of fiscal 2019 and all of fiscal 2018 did not include royalties from sales of Apple or other products by Apple's contract manufacturers due to our prior dispute. Revenues of $4.7 billion recorded in the third quarter of fiscal 2019 resulting from the settlement with Apple and its contract manufacturers were not allocated to our segment results.

QTL revenues for fiscal 2020 included royalties from Huawei for sales made in the September 2020 quarter under the new long-term, global patent license agreement. QTL revenues in fiscal 2019 included $450 million of royalties due under a second interim agreement with Huawei that concluded in the third quarter of fiscal 2019. Due to our prior dispute that was resolved in July 2020, we did not record any revenues in the first three quarters of fiscal 2020 or the fourth quarter of fiscal 2019 for royalties due on the sales of Huawei's consumer wireless products. QTL revenues in fiscal 2018 included $600 million paid under an interim agreement with Huawei. Revenues of $1.8 billion recorded in the fourth quarter of fiscal 2020 resulting from the settlement agreement with Huawei and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent license agreement with Huawei were not allocated to our segment results.

2020 vs. 2019

The increase in QTL licensing revenues in fiscal 2020 was primarily due to:

+ $906 million increase in estimated sales of 3G/4G/5G-based multimode products, primarily due to new license agreements with Apple and Huawei signed in April 2019 and July 2020, respectively, partially offset by the negative impact of COVID-19 on demand for licensees' products that incorporate our intellectual property
+ $110 million increase in royalty revenues recognized related to devices sold in prior periods
- $450 million in licensing revenues recorded in fiscal 2019 resulting from the second interim agreement with Huawei
- $129 million in lower estimated revenues per unit, in part reflecting licensees entering into new 5G multimode license agreements with rights to our cellular standard-essential patents only (compared to previous licenses that also included rights to certain other non-cellular essential patents) and decreases in our per unit royalty caps

QTL EBT as a percentage of revenues increased in fiscal 2020 primarily due to:

+ higher QTL revenues
+ lower selling, general and administrative expenses, primarily from lower litigation costs
- higher research and development expenses

QTL accounts receivable increased by 4% in fiscal 2020 from $1.54 billion to $1.60 billion, primarily driven by an increase in estimated royalties for the September 2020 quarter (in part due to the new license agreement with Huawei), partially offset by scheduled payments received from Oppo and vivo for amounts due under agreements reached in fiscal 2020 related to license agreements that expired on March 31, 2020 (for which payments were withheld while good faith negotiations occurred).

2019 vs. 2018

QTL licensing revenues in fiscal 2019, which primarily related to royalties due on sales made by our licensees in the December 2018, March 2019, June 2019 and September 2019 quarters, decreased compared to licensing revenues in fiscal 2018, which primarily related to royalties due on sales made by our licensees in the September 2017, December 2017, March 2018 and June 2018 quarters, primarily due to:

- \- $757 million in lower estimated revenues per unit compared to revenues per reported unit, in part reflecting licensees entering into new 5G multimode license agreements with rights to our cellular standard-essential patents only (compared to previous licenses that also included rights to certain other non-cellular essential patents), and decreases in our per unit royalty caps
- \- $150 million in lower royalty revenues from Huawei under the interim agreements
- \+ $484 million increase in estimated sales of 3G/4G/5G-based multimode products compared to reported sales of 3G/4G-based products, primarily due to the April 2019 license agreement with Apple, partially offset by a decline in unit demand and a shift in OEM share towards Huawei

QTL EBT as a percentage of revenues decreased in fiscal 2019 primarily due to:

- higher research and development costs due to an increase in the amount of research and development expense allocated to QTL in fiscal 2019
- lower QTL revenues
- \+ lower selling, general and administrative expenses, primarily from lower litigation costs and lower bad debt expense

QSI Segment (in millions)

	2020	2019	2018	2020 vs. 2019 Change	2019 vs. 2018 Change
Equipment and services revenues	$ 36	$ 152	$ 100	$ (116)	$ 52
EBT	$ (11)	$ 344	$ 24	$ (355)	$ 320

2020 vs. 2019

The decrease in QSI EBT in of fiscal 2020 was primarily due to:

- $248 million increase in impairment losses on other investments, of which a significant portion related to our investment in OneWeb
- $116 million decrease in revenues associated with certain development contracts with OneWeb
- $60 million decrease in net gains on investments, primarily driven by a gain in fiscal 2019 resulting from the initial public offering of certain of our non-marketable equity investments
- \+ $50 million decrease in our share of equity method investee losses

QSI segment assets, which primarily consist of marketable and non-marketable equity investments, decreased by 20% in fiscal 2020 from $1.71 billion to $1.37 billion, primarily due to impairments of certain non-marketable investments and sale of marketable securities.

2019 vs. 2018

The increase in QSI EBT in fiscal 2019 was primarily due to:

- \+ $270 million increase in net gains on investments, primarily driven by gains resulting from the initial public offering of certain non-marketable equity investments
- \+ $91 million increase resulting from higher revenues and lower costs associated with certain development contracts with OneWeb
- $41 million increase in impairment losses on investments, primarily related to our investment in OneWeb

Looking Forward

In the coming years, we expect new consumer demand for 3G/4G/5G multimode and 5G products and services to ramp around the world as we transition from 3G/4G multimode and 4G products and services. We believe that 5G will drive growth and transformation in emerging device categories and industries that will create new business models and new services, resulting from the expanding adoption of certain technologies that are already commonly used in smartphones by industry segments or applications beyond mobile, such as automotive and IoT. We believe it is important that we remain a leader in 5G technology development, standardization, intellectual property creation and licensing of 5G technologies, and to be a leading developer and supplier of 5G integrated circuit products in order to sustain and grow our business long term.

As we look forward to the next several months and beyond, we expect our business to be impacted by the following key items:

- The COVID-19 pandemic has resulted in significant economic uncertainty and has led to a global recession. We expect the pandemic will continue to have a negative impact on QTL and QCT revenues in the near term based on a reduction in consumer demand for smartphones and other products. We have not experienced, and we currently do not anticipate a material adverse impact on our ability, or our suppliers' ability, to manufacture and test our products or on our ability to provide our products to our customers. Workforce changes that we implemented in the second quarter of fiscal 2020 are expected to remain in effect in the near term. The degree to which the COVID-19 pandemic impacts our business, financial condition and results of operations will depend on future developments, which are highly uncertain. See "Risk Factors" in this Annual Report, specifically the Risk Factor entitled "*The recent coronavirus (COVID-19) pandemic has had an adverse effect on our business and results of operations, and we expect its impact will continue, at least in the near term.*"

- In May 2019, in *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated*, the district court issued an Order ruling against us and imposing certain injunctive relief. On August 11, 2020, on appeal, the Ninth Circuit reversed the district court's judgment, vacated its injunction and vacated its partial grant of summary judgment. On September 25, 2020, the FTC filed a Petition for Rehearing *En Banc*. On October 28, 2020, the Ninth Circuit denied the FTC's petition. Regulatory authorities in certain other jurisdictions are investigating and/or have investigated our business practices and instituted proceedings against us, and they or other regulatory authorities may do so in the future. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, financial condition and cash flows. See "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies" and "Risk Factors" in this Annual Report, including the Risk Factor entitled "*Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations.*"

- We have not been the sole supplier of modems for iPhone products beginning with products that launched in September 2016, and Apple is not utilizing our modems for iPhone products that launched in September 2019. We expect QCT revenues to be favorably impacted in the near-term as we anticipate a ramp in volume of shipments to support Apple's 2020 iPhone product launches.
- We expect our research and development costs will increase in the near-term primarily due to increased investment towards advancements in 5G and application processor technologies and certain other long-term initiatives, as well as an increase in share-based compensation expense.
- We expect increased demand in the December quarter from certain Chinese OEMs as they position to gain device share, particularly in China. Since it will take time for us to adapt our supply chain process, we do not expect to realize the full benefit from this increased demand from OEMs.
- We expect continued intense competition, particularly in China, as our competitors expand their product offerings and/or reduce the prices of their products as part of a strategy to attract new and/or retain existing customers;
- Current U.S./China trade relations and/or national security protection policies may negatively impact our business, growth prospects and results of operations. See "Risk Factors" in this Annual Report, including the Risk Factor entitled "*A significant portion of our business is concentrated in China, and the risks of such concentration are exacerbated by U.S./China trade and national security tensions.*"
- Commercial 5G network deployments and device launches will continue into calendar 2021 and beyond.

In addition to the foregoing business and market-based matters, we continue to devote resources to working with and educating participants in the wireless value chain and governments as to the benefits of our licensing program and our extensive technology investments in promoting a highly competitive and innovative wireless industry. However, we expect that certain companies may continue to be dissatisfied with the need to pay reasonable royalties for the use of our technology and not welcome the success of our licensing program in enabling new, highly cost-effective competitors to their products. Accordingly, such companies, and/or governments or regulators, may continue to challenge our business model in various forums throughout the world.

Further discussion of risks related to our business is provided in "Part I, Item 1A. Risk Factors" included in this Annual Report.

Liquidity and Capital Resources

Our principal sources of liquidity are our existing cash, cash equivalents and marketable securities, cash generated from operations and cash provided by our debt programs. The following table presents selected financial information related to our liquidity as of and for the years ended September 27, 2020 and September 29, 2019 (in millions):

	September 27, 2020	September 29, 2019	Change
Cash, cash equivalents and marketable securities	$ 11,249	$ 12,296	$ (1,047)
Accounts receivable, net	4,003	2,471	1,532
Inventories	2,598	1,400	1,198
Short-term debt	500	2,496	(1,996)
Long-term debt	15,226	13,437	1,789
Noncurrent income taxes payable	1,872	2,088	(216)

	2020	2019	Change
Net cash provided by operating activities	$ 5,814	$ 7,286	$ (1,472)
Net cash used by investing activities	(5,263)	(806)	(4,457)
Net cash used by financing activities	(5,707)	(6,386)	679

The net decrease in cash, cash equivalents and marketable securities was primarily due to $2.9 billion in cash dividends paid, $2.4 billion to repurchase shares of our common stock, $1.4 billion in capital expenditures and $344 million in payments of tax withholdings related to the vesting of share-based awards, partially offset by net cash provided by operating activities and $329 million in proceeds from issuance of common stock.

The increase in accounts receivable was primarily due to the remaining amounts due under the settlement agreement with Huawei and increases in QCT and QTL accounts receivable. The increase in inventories was primarily driven by the ramp in 5G demand.

Debt. In May 2020, we issued an aggregate principal amount of $2.0 billion of unsecured fixed-rate notes with varying maturities (May 2020 Notes). The net proceeds were used to repay the $250 million floating-rate and $1.75 billion fixed-rate notes that matured on May 20, 2020, which were classified as short-term debt at September 29, 2019. In August 2020, we completed an exchange of $2.0 billion of our outstanding fixed-rate notes maturing between 2022 and 2025 (Old Notes) for $2.2 billion of fixed-rate notes maturing in 2028 and 2032 (August 2020 Notes). We also repurchased $202 million of the Old Notes from holders not eligible to participate in the exchange. At September 27, 2020, we had $15.5 billion of principal floating- and fixed-rate notes outstanding, with maturity dates in 2022 through 2050.

We have an unsecured commercial paper program, which provides for the issuance of up to $4.5 billion of commercial paper. Net proceeds from this program are used for general corporate purposes. At September 27, 2020, we had $500 million of commercial paper outstanding.

Our Amended and Restated Revolving Credit Facility (Revolving Credit Facility) provides for unsecured revolving facility loans, swing line loans and letters of credit in the aggregate amount of up to $4.5 billion and expires on November 8, 2021. At September 27, 2020, no amounts were outstanding under the Revolving Credit Facility.

We may issue new debt in the future. COVID-19 has led to disruption and volatility in the global capital markets, which may adversely impact the cost of and access to capital. The amount and timing of such borrowings will be subject to a number of factors, including acquisitions and strategic investments, acceptable interest rates and changes in corporate income tax law, among other factors.

Additional information regarding our outstanding debt at September 27, 2020 is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 6. Debt."

Income Taxes. At September 27, 2020, we estimated remaining future payments of $2.0 billion for a one-time U.S. repatriation tax accrued in fiscal 2018 (Toll Charge), after application of certain tax credits, which is payable in installments over the next six years. At September 27, 2020, other current liabilities included $174 million for the next installment due in January 2021.

Additional information regarding our income taxes is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 3. Income Taxes."

Capital Return Program. The following table summarizes stock repurchases, before commissions, and dividends paid during fiscal 2020, 2019 and 2018 (in millions, except per-share amounts):

	Stock Repurchase Program			Dividends		Total
	Shares	Average Price Paid Per Share (1)	Amount	Per Share	Amount	Amount
2020	31	$ 79.32	$ 2,450	$ 2.54	$ 2,882	$ 5,332
2019	96	66.18	1,793	2.48	2,968	4,761
2018	279	65.41	22,569	2.38	3,466	26,035

(1) Average Price Paid Per Share in fiscal 2018 and 2019 excludes the impact of the three accelerated share repurchase agreements (the ASR Agreements) executed in September 2018 and completed in September 2019. The average price per share under the ASR Agreements was $64.76.

In fiscal 2018, we announced a stock repurchase program authorizing us to repurchase up to $30 billion of our common stock. At September 27, 2020, $4.6 billion remained authorized for repurchase under the stock repurchase program. The stock repurchase program has no expiration date. Subsequent to September 27, 2020, we resumed stock repurchases under the stock repurchase program, which we had suspended in the third quarter of fiscal 2020 in light of COVID-19 to maintain our financial liquidity position and flexibility. We periodically evaluate repurchases as a means of returning capital to stockholders to determine when and if repurchases are in the best interests of our stockholders and may reinstate, accelerate, suspend, delay or discontinue repurchases at any time.

On October 14, 2020, we announced a cash dividend of $0.65 per share on our common stock, payable on December 17, 2020 to stockholders of record as of the close of business on December 3, 2020. We intend to continue to use cash dividends as a means of returning capital to stockholders, subject to capital availability, which may be impacted by COVID-19, and our view that cash dividends are in the best interests of our stockholders, among other factors.

Additional Capital Requirements. We believe our cash, cash equivalents and marketable securities, our expected cash flow generated from operations and our expected financing activities will satisfy our working and other capital requirements for at least the next 12 months based on our current business plans. Recent and expected working and other capital requirements, in addition to the above matters, also include the items described below:

- Our purchase obligations at September 27, 2020, some of which relate to research and development activities and capital expenditures, totaled $5.5 billion and $350 million for fiscal 2021 and 2022, respectively, and $242 million thereafter.
- Our research and development expenditures were $6.0 billion in fiscal 2020 and $5.4 billion in fiscal 2019, and we expect to increase our investment in research and development in fiscal 2021, including in advancements in existing and new technologies and products.
- Cash outflows for capital expenditures were $1.4 billion in fiscal 2020 and $887 million in fiscal 2019. We expect capital expenditures to increase in the near term to support the increase in our manufacturing and production capacity needs primarily resulting from the ramp in 5G devices.
- At September 27, 2020, $1.5 billion was accrued related to two fines imposed by the EC (based on the exchange rate at September 27, 2020, including related foreign currency gains and accrued interest). We have provided financial guarantees in lieu of cash payment to satisfy the obligations while we appeal the EU's decisions.
- We expect to continue making strategic investments and acquisitions, the amounts of which could vary significantly, to open new opportunities for our technologies, obtain development resources, grow our patent portfolio or pursue new businesses.

Further, regulatory authorities in certain jurisdictions have investigated our business practices and instituted proceedings against us and they or other regulatory authorities may do so in the future. Additionally, certain of our direct and indirect customers and licensees, have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, financial condition and cash flows. See "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies" and "Part I, Item 1A. Risk Factors" in this Annual Report.

Contractual Obligations/Off-Balance Sheet Arrangements

We have no significant contractual obligations not fully recorded on our consolidated balance sheets or fully disclosed in the notes to our consolidated financial statements. We have no material off-balance sheet arrangements as defined in Regulation S-K 303(a)(4)(ii).

The following table summarizes the payments due by fiscal period for our outstanding contractual obligations at September 27, 2020 (in millions):

	Total	2021	2022-2023	2024-2025	Beyond 2025	No Expiration Date
Purchase obligations (1)	$ 6,060	$ 5,468	$ 539	$ 53	$ —	$ —
Operating lease obligations (2)	578	141	196	91	150	—
Finance lease obligations (2)	130	14	20	16	80	—
Equity funding and financing commitments (3)	185	103	1	—	—	81
Long-term debt (4)	22,057	476	3,890	3,067	14,624	—
Other long-term liabilities (5) (6)	2,807	220	472	862	631	622
Total contractual obligations	$ 31,817	$ 6,422	$ 5,118	$ 4,089	$ 15,485	$ 703

(1) Purchase obligations primarily relate to integrated circuit product inventory obligations, which represent purchase commitments for raw materials, semiconductor die, finished goods and manufacturing services, such as wafer bump, probe, assembly and final test. Under our manufacturing relationships with our foundry suppliers and assembly and test service providers, cancellation of outstanding purchase commitments is generally allowed but requires payment of costs incurred through the date of cancellation, and in some cases, incremental fees related to capacity underutilization.

(2) Amounts represent future lease payments. Operating and finance lease obligations include the related current portions. Operating and finance lease liabilities were included in other current liabilities and other noncurrent liabilities in the consolidated balance sheet at September 27, 2020.

(3) Certain of these commitments do not have fixed funding dates and are subject to certain conditions and have, therefore, been presented as having no expiration date. Commitments represent the maximum amounts to be funded under these arrangements; actual funding may be in lesser amounts or not at all.

(4) Amounts represent contractual payments of principal and interest.

(5) Amounts represent contractual payments of amounts recorded on our consolidated balance sheet. Certain long-term liabilities reflected on our balance sheet, such as unearned revenues, are not presented in this table because they do not require cash settlement in the future. Other long-term liabilities as presented in this table include the related current portions, as applicable. These amounts do not include the EC fines recorded as current liabilities on our consolidated balance sheet. For further information regarding these fines, refer to "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

(6) Our consolidated balance sheet at September 27, 2020 included $1.8 billion in other noncurrent liabilities for uncertain tax positions, which primarily relate to a reduction of U.S. foreign tax credits that will occur if we are successful in our claim for a refund of Korean withholding tax (for which a $1.6 billion receivable was recorded at September 27, 2020). If we are successful in our claim for a refund, the majority of this liability will be payable when we receive the Korean tax refund, with the remainder payable over periods up to and including the last payment of the Toll Charge in January 2026. The future payments related to uncertain tax positions recorded as other noncurrent liabilities have not been presented in the table above due to the uncertainty of the amounts and timing of cash settlement with the taxing authorities.

Additional information regarding our financial commitments at September 27, 2020 is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 3. Income Taxes," "Note 6. Debt" and "Note 7. Commitments and Contingencies."

Critical Accounting Estimates

The preparation of our consolidated financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and disclosure of contingent assets and liabilities. We base our estimates on historical and anticipated results and trends and on various other assumptions that we believe are reasonable under the circumstances, including assumptions as to future events. By their nature, estimates are subject to an inherent degree of uncertainty. Although we believe that our estimates and the assumptions supporting our assessments are reasonable, actual results that differ from our estimates could be material to our consolidated financial statements.

Refer to "Note 1. Significant Accounting Policies" and "Note 2. Composition of Certain Financial Statement Items" included in this Annual Report in "Notes to Consolidated Financial Statements" for further information on our critical accounting estimates and policies, which are as follows. In addition, if the impact of changes in our critical accounting estimates are material or considered necessary to understand our results of operations for the periods presented, then such information is disclosed within this Annual Report in "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, Results of Operations."

Revenue Recognition. We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Since the adoption of ASC 606 in fiscal 2019, we estimate and recognize sales-based royalties on such licensed products in the period in which the licensees' sales occur, which is based largely on preliminary royalty estimates provided by our licensees. Actual amounts for sales-based royalties have been materially consistent with such estimates, and no significant reversals of revenues have been required as a result of adjustments to prior period royalty estimates. Additionally, with respect to our settlement agreement and new global patent license agreement with Huawei, significant evaluation and judgment were required in determining the appropriate accounting.

Impairment of Non-marketable Equity Investments. We monitor our investments for events or circumstances that could indicate impairment and observable price adjustments. In fiscal 2020, we recorded impairment losses on other investments of $405 million, an increase of $270 million compared to fiscal 2019, a portion of which was due in part to the impacts of COVID-19 on certain companies in which we hold non-marketable investments. For a significant portion of these impairments, the estimated fair values resulted in a full write-off of the carrying values.

Inventories. We measure inventory at the lower of cost or net realizable value considering judgments related to future demand and market conditions, such as COVID-19 in fiscal 2020 that negatively impacted consumer demand for devices that incorporate our products. For fiscal 2020, 2019 and 2018, the overall net effect on our operating results from changes in this estimate were not material.

Impairment of Goodwill and Long-Lived Assets. We monitor our goodwill and long-lived assets for the existence of impairment indicators and apply judgments in the valuation methods and underlying assumptions utilized in such assessments. During fiscal 2020, we did not record any impairment charges for goodwill and long-lived assets. Additionally, the estimated fair values of our QCT and QTL reporting units were substantially in excess of their respective carrying values at September 27, 2020. In fiscal 2019 and 2018, we recorded $203 million and $273 million, respectively, of impairment charges for goodwill and long-lived assets.

Legal and Regulatory Proceedings. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. We face difficulties in evaluating or estimating likely outcomes or the amount of possible loss in certain legal and regulatory proceedings.

Income Taxes. We make significant judgments and estimates in determining our provision for income taxes, including our assessment of our income tax positions given the uncertainties involved in the interpretation and application of complex tax laws and regulations in various taxing jurisdictions.

Recent Accounting Pronouncements

Information regarding recent accounting pronouncements and the impact of those pronouncements, if any, on our consolidated financial statements is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies.”

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Marketable Securities

We have made investments in marketable equity securities of companies of varying size, style, industry and geography and changes in investment allocations may affect the price volatility of our investments. In fiscal 2018, we announced that we had been authorized to repurchase up to $30 billion of our common stock. The actions taken pursuant to our stock repurchase program have significantly reduced the amount of cash available to fund our investments in marketable securities.

Equity Price Risk. At September 27, 2020, the recorded value of our marketable equity securities was $352 million. A 10% decrease in the market price of our marketable equity securities at September 27, 2020 would have caused a decrease in the carrying amounts of these securities of $35 million. A 10% decrease in the market price of our marketable equity securities at September 29, 2019 would have caused a decrease in the carrying amounts of these securities of $42 million.

Interest Rate Risk. We invest a portion of our cash in a number of diversified fixed- and floating-rate securities consisting of cash equivalents, marketable debt securities and time and demand deposits that are subject to interest rate risk. At September 27, 2020, a hypothetical increase in interest rates of 100 basis points across the entire yield curve on our holdings would have resulted in a decrease of $32 million in the fair value of our holdings. At September 29, 2019, a hypothetical increase in interest rates of 100 basis points across the entire yield curve on our holdings would have resulted in a negligible decrease in the fair value of our holdings.

Other Investments

Equity Price Risk. We hold investments in non-marketable equity instruments in privately held companies that may be impacted by equity price risks. Beginning in the second quarter of fiscal 2020, the rapid, global spread of COVID-19 and the uncertainty it has created has resulted in significant volatility in the condition of economies and financial markets globally and has led to a global recession. This has adversely affected certain of our non-marketable equity investments. Volatility in the equity markets could negatively affect our investees' ability to raise additional capital as well as our ability to realize value from our investments through initial public offerings, mergers and private sales. Consequently, we could incur significant losses on our non-marketable equity investments. At September 27, 2020, the aggregate carrying value of our non-marketable equity investments was included in other noncurrent assets and was $982 million.

Debt

Interest Rate Risk. As substantially all of our debt is comprised of unsecured fixed-rate notes, we are not subject to significant interest rate risk. At September 27, 2020, we had an aggregate principal amount of $500 million in unsecured floating-rate notes due January 30, 2023. The interest rates on our floating-rate notes are based on LIBOR. At September 27, 2020, a hypothetical increase in LIBOR-based interest rates of 100 basis points would cause a negligible increase to interest expense on an annualized basis as it relates to our floating-rate notes. At September 27, 2020, we also had $500 million in commercial paper outstanding, for which our exposure to interest rate risk is negligible based on the original maturities of approximately three months or less.

Additional information regarding our notes and commercial paper program is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies" and "Notes to Consolidated Financial Statements, Note 6. Debt."

Foreign Exchange Risk

We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative financial instruments, including foreign currency forward and option contracts with financial counterparties. We utilize such derivative financial instruments for hedging or risk management purposes rather than for speculative purposes. Counterparties to our derivative contracts are all major banking institutions. In the event of the financial insolvency or distress of a counterparty to our derivative financial instruments, we may be unable to settle transactions if the counterparty does not provide us with sufficient collateral to secure its net settlement obligations to us, which could have a negative impact on our results. A description of our foreign currency accounting policies is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies."

Foreign Currency Options. At September 27, 2020, our net liability related to foreign currency options designated as hedges of foreign currency risk on royalties earned from certain licensees was negligible. If our forecasted royalty revenues for currencies in which we hedge were to decline by 10% and foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would not incur a loss as our hedge positions would continue to be fully effective. Based on forecasts at September 29, 2019, assuming the same hypothetical market conditions, we would also not have incurred a loss.

Foreign Currency Forwards. At September 27, 2020, our net asset related to foreign currency forward contracts designated as hedges of foreign currency risk on certain operating expenditure transactions was $49 million. If our forecasted operating expenditures for currencies in which we hedge were to decline by 10% and foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would not incur a loss as our hedge positions would continue to be fully effective. Based on forecasts at September 29, 2019, assuming the same hypothetical market conditions, we would also not have incurred a loss.

At September 27, 2020, our net liability related to foreign currency forward contracts not designated as hedging instruments used to manage foreign currency risk on certain receivables and payables was negligible. If the foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, we would not incur a loss as the change in the fair value of the foreign currency option and forward contracts would be offset by the change in fair value of the related receivables and/or payables being economically hedged. Based on forecasts at September 29, 2019, assuming the same hypothetical market conditions, we would also not have incurred a loss.

Net Investment Hedges. At September 27, 2020, we have designated $1.4 billion of foreign currency-denominated liabilities, excluding accrued interest, as hedges of our net investment in certain foreign subsidiaries. If foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, there would be an increase of $144 million in the accumulated other comprehensive loss attributable to the cumulative foreign currency translation adjustment at September 27, 2020 related to our net investment hedges. The change in value recorded in cumulative foreign currency translation adjustment would be expected to offset a corresponding foreign currency translation gain or loss from our investment in foreign subsidiaries.

Functional Currency. Financial assets and liabilities held by consolidated subsidiaries that are not denominated in the functional currency of those entities are subject to the effects of currency fluctuations and may affect reported earnings. As a global company, we face exposure to adverse movements in foreign currency exchange rates. We may hedge currency exposures associated with certain assets and liabilities denominated in nonfunctional currencies and certain anticipated nonfunctional currency transactions. As a result, we could experience unanticipated gains or losses on anticipated foreign currency cash flows, as well as economic loss with respect to the recoverability of investments. While we may hedge certain transactions with non-U.S. customers, declines in currency values in certain regions may, if not reversed, adversely affect future product sales because our products may become more expensive to purchase in the countries of the affected currencies.

Our analysis methods used to assess and mitigate the risks discussed above should not be considered projections of future risks.

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements at September 27, 2020 and September 29, 2019 and for each of the three years in the period ended September 27, 2020 and the Report of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm, are included in this Annual Report on pages F-1 through F-37.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such terms are defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the Exchange Act). Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Annual Report.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under this framework, our management concluded that our internal control over financial reporting was effective as of September 27, 2020.

PricewaterhouseCoopers LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this Annual Report, has also audited the effectiveness of our internal control over financial reporting as of September 27, 2020, as stated in its report which appears on pages F-1 through F-3 in this Annual Report.

Inherent Limitations over Internal Controls

Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that:

i. pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;

ii. provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

iii. provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the consolidated financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations, including the possibility of human error and circumvention by collusion or overriding of controls. Accordingly, even an effective internal control system may not prevent or detect material misstatements on a timely basis. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the fourth quarter of fiscal 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item regarding directors is incorporated by reference to our 2021 Proxy Statement to be filed with the SEC in connection with our 2021 Annual Meeting of Stockholders (2021 Proxy Statement) in “Proposal 1: Election of Directors” under the subheading “Nominees for Election.” Certain information required by this item regarding executive officers is set forth in Item 1 of Part I of this Report under the heading “Information about our Executive Officers.” The information required by this item regarding corporate governance is incorporated by reference to our 2021 Proxy Statement in the section titled “Corporate Governance” under the headings “Code of Ethics and Corporate Governance Principles and Practices” and “Board Meetings, Committees and Attendance.”

Item 11. Executive Compensation

The information required by this item is incorporated by reference to our 2021 Proxy Statement in the sections titled “Executive Compensation and Related Information,” “HR and Compensation Committee Report” and “Director Compensation,” and in the section titled “Stock Ownership of Certain Beneficial Owners and Management” under the subheading “Compensation Committee Interlocks and Insider Participation.”

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference to our 2021 Proxy Statement in the section titled “Stock Ownership of Certain Beneficial Owners and Management” including under the subheading “Equity Compensation Plan Information.”

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to our 2021 Proxy Statement in the section titled “Certain Relationships and Related-Person Transactions,” and in the section titled “Corporate Governance” under the subheadings “Director Independence” and “Board Meetings, Committees and Attendance.”

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to our 2021 Proxy Statement in “Proposal 2: Ratification of Selection of Independent Public Accountants.”

PART IV

Item 15. Exhibits and Financial Statement Schedules

The following documents are filed as part of this report:

(a) Financial Statements:

Financial statement schedules other than those listed above have been omitted because they are either not required, not applicable or the information is otherwise included in the notes to the consolidated financial statements.

(b) Exhibits

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
3.1	Amended and Restated Certificate of Incorporation.	8-K	4/20/2018	3.1	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
3.2	Amended and Restated Bylaws.	8-K	7/17/2018	3.1	
4.1	Indenture, dated May 20, 2015, between the Company and U.S. Bank National Association, as trustee.	8-K	5/21/2015	4.1	
4.2	Officers' Certificate, dated May 20, 2015, for the Floating Rate Notes due 2018, the Floating Rate Notes due 2020, the 1.400% Notes due 2018, the 2.250% Notes due 2020, the 3.000% Notes due 2022, the 3.450% Notes due 2025, the 4.650% Notes due 2035 and the 4.800% Notes due 2045.	8-K	5/21/2015	4.2	
4.3	Form of 3.000% Notes due 2022.	8-K	5/21/2015	4.7	
4.4	Form of 3.450% Notes due 2025.	8-K	5/21/2015	4.8	
4.5	Form of 4.650% Notes due 2035.	8-K	5/21/2015	4.9	
4.6	Form of 4.800% Notes due 2045.	8-K	5/21/2015	4.10	
4.7	Officers' Certificate, dated May 26, 2017, for the Floating Rate Notes due 2019, the Floating Rate Notes due 2020, the Floating Rate Notes due 2023, the 1.850% Notes due 2019, the 2.100% Notes due 2020, the 2.600% Notes due 2023, the 2.900% Notes due 2024, the 3.250% Notes due 2027 and the 4.300% Notes due 2047.	8-K	5/31/2017	4.2	
4.8	Form of Floating Rate Notes due 2023.	8-K	5/31/2017	4.5	
4.9	Form of 2.600% Notes due 2023.	8-K	5/31/2017	4.8	
4.10	Form of 2.900% Notes due 2024.	8-K	5/31/2017	4.9	
4.11	Form of 3.250% Notes due 2027.	8-K	5/31/2017	4.10	
4.12	Form of 4.300% Notes due 2047.	8-K	5/31/2017	4.11	
4.13	Officers' Certificate, dated May 8, 2020, for the 2.150% Notes due 2030 and the 3.250% Notes due 2050.	8-K	5/11/2020	4.2	
4.14	Form of 2.150% Notes due 2030.	8-K	5/11/2020	4.3	
4.15	Form of 3.250% Notes due 2050.	8-K	5/11/2020	4.4	
4.16	Officers' Certificate, dated August 14, 2020, for the 1.300% Notes due 2028 and the 1.650% Notes due 2032.	8-K	8/18/2020	4.2	
4.17	Form of 1.300% Rule 144A Global Notes due 2028.	8-K	8/18/2020	4.3	
4.18	Form of 1.300% Regulation S Global Notes due 2028.	8-K	8/18/2020	4.4	
4.19	Form of 1.650% Rule 144A Global Notes due 2032.	8-K	8/18/2020	4.5	
4.20	Form of 1.650% Regulation S Global Notes due 2032.	8-K	8/18/2020	4.6	
4.21	Registration Rights Agreement, dated as of August 14, 2020.	8-K	8/18/2020	4.7	
4.22	Description of registrant's securities.	10-K	11/6/2019	4.15	
10.1	Form of Indemnity Agreement between the Company and its directors and officers. (2)	10-K	11/4/2015	10.1	
10.2	Amended and Restated 2016 Long-Term Incentive Plan. (2)	10-Q	4/29/2020	10.7	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.3	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in the United States. (2)	10-Q	4/20/2016	10.32	
10.4	Form of Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement under the 2016 Long-Term Incentive Plan for non-employee directors residing in Hong Kong. (2)	10-Q	7/29/2020	10.9	
10.5	Amended and Restated Credit Agreement among QUALCOMM Incorporated, the lenders party thereto and Bank of America, N.A., as Administrative Agent, dated as of November 8, 2016.	8-K	11/9/2016	10.2	
10.6	Form of Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement under the 2016 Long-Term Incentive Plan, which includes a September 25, 2017 to September 27, 2020 performance period. (2)	10-K	11/1/2017	10.40	
10.7	Qualcomm Incorporated Non-Executive Officer Change in Control Severance Plan.	10-Q	1/31/2018	10.42	
10.8	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement for Non-Employee Directors in Singapore. (2)	10-Q	4/25/2018	10.58	
10.9	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement. (2)	10-Q	4/25/2018	10.60	
10.10	Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan, as amended. (2)	10-Q	4/25/2018	10.62	
10.11	Qualcomm Incorporated Executive Officer Change in Control Severance Plan. (2)	8-K	5/25/2018	10.1	
10.12	Qualcomm Incorporated Executive Officer Severance Plan. (2)	8-K	9/21/2018	10.1	
10.13	Qualcomm Incorporated 2016 Long-Term Incentive Plan CEO Performance Stock Option Grant Notice and CEO Performance Stock Option Agreement. (2)	10-K	11/7/2018	10.59	
10.14	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement. (2)	10-K	11/7/2018	10.60	
10.15	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement. (2)	10-K	11/7/2018	10.61	
10.16	QUALCOMM Incorporated Non-Qualified Deferred Compensation Plan, as amended and restated effective February 13, 2019. (2)	10-Q	5/1/2019	10.7	
10.17	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award RTSR Shares Grant Notice and ROIC Shares Grant Notice, and Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Agreement (September 30, 2019 - September 25, 2022 Performance Period). (2)	10-K	11/6/2019	10.29	
10.18	Qualcomm Incorporated 2020 Director Compensation Plan. (2)	10-K	11/6/2019	10.30	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.19	Form of 2020 Annual Cash Incentive Plan Performance Unit Agreement (2)	10-Q	2/5/2020	10.31	
10.20	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement (2020 Form). (2)				X
10.21	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement (2020 Form). (2)				X
10.22	Qualcomm Incorporated 2021 Director Compensation Plan. (2)				X
21	Subsidiaries of the Company.				X
23.1	Consent of Independent Registered Public Accounting Firm.				X
31.1	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Steve Mollenkopf.				X
31.2	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Akash Palkhiwala.				X
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Steve Mollenkopf.				X
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Akash Palkhiwala.				X
101.INS	Inline XBRL Instance Document.				X
101.SCH	Inline XBRL Taxonomy Extension Schema.				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase.				X
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase.				X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase.				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase.				X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).				

(1) We shall furnish supplementally a copy of any omitted schedule to the Commission upon request.

(2) Indicates management contract or compensatory plan or arrangement required to be identified pursuant to Item 15(a).

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

November 4, 2020

QUALCOMM Incorporated

By /s/ Steve Mollenkopf

Steve Mollenkopf
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Steve Mollenkopf Steve Mollenkopf	Chief Executive Officer and Director (Principal Executive Officer)	November 4, 2020
/s/ Akash Palkhiwala Akash Palkhiwala	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	November 4, 2020
/s/ Erin Polek Erin Polek	Senior Vice President, Corporate Controller and Chief Accounting Officer (Principal Accounting Officer)	November 4, 2020
/s/ Mark Fields Mark Fields	Director	November 4, 2020
/s/ Jeffrey W. Henderson Jeffrey W. Henderson	Director	November 4, 2020
/s/ Ann M. Livermore Ann M. Livermore	Director	November 4, 2020
/s/ Harish Manwani Harish Manwani	Director	November 4, 2020
/s/ Mark D. McLaughlin Mark D. McLaughlin	Chair of the Board	November 4, 2020
/s/ Jamie S. Miller Jamie S. Miller	Director	November 4, 2020
/s/ Clark T. Randt, Jr. Clark T. Randt, Jr.	Director	November 4, 2020
/s/ Irene B. Rosenfeld Irene B. Rosenfeld	Director	November 4, 2020
/s/ Neil Smit Neil Smit	Director	November 4, 2020
/s/ Jean-Pascal Tricoire Jean-Pascal Tricoire	Director	November 4, 2020
/s/ Anthony J. Vinciquerra Anthony J. Vinciquerra	Director	November 4, 2020

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of QUALCOMM Incorporated

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of QUALCOMM Incorporated and its subsidiaries as of September 27, 2020 and September 29, 2019, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended September 27, 2020, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of September 27, 2020, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 27, 2020 and September 29, 2019, and the results of its operations and its cash flows for each of the three years in the period ended September 27, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 27, 2020, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the COSO.

Changes in Accounting Principles

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in fiscal 2020 and the manner in which it accounts for revenues from contracts with customers and income tax effects of intra-entity transfers of assets other than inventory in fiscal 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Legal and Regulatory Proceedings

As described in Notes 1 and 7 to the consolidated financial statements, the Company is currently involved in certain legal and regulatory proceedings. If there is at least a reasonable possibility that a material loss may have been incurred associated with a pending legal and regulatory proceeding, management discloses such fact, and if reasonably estimable, management provides an estimate of the possible loss or range of possible loss. Management records the best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of a loss can be reasonably estimated with no best estimate in the range, management records the minimum estimated liability. As additional information becomes available, management assesses the potential liability related to pending legal or regulatory proceedings and revises the estimates and updates the disclosures accordingly. Significant judgment is required by management in both the determination of probability of loss and the determination as to whether a loss is reasonably estimable.

The principal considerations for our determination that performing procedures relating to legal and regulatory proceedings is a critical audit matter are the significant judgment by management when assessing the likelihood of a loss being incurred and when determining whether a reasonable estimate of the loss or range of loss can be made; this led to a high degree of auditor judgment, subjectivity and significant audit effort in evaluating management's assessment of the loss contingencies associated with the legal and regulatory proceedings.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's evaluation of legal and regulatory proceedings, including controls over determining whether a loss is probable and whether the amount of loss can be reasonably estimated, as well as financial statement disclosures. These procedures also included, among others: (i) obtaining and evaluating the letters of audit inquiry with external and internal legal counsel; (ii) reading certain correspondence the Company received from regulators; (iii) reading certain documents the Company has filed with the courts and related counterparty filings; (iv) reading certain documents issued by the courts; (v) evaluating the reasonableness of management's process for identifying and assessing loss contingencies regarding whether an unfavorable outcome is probable and reasonably estimable; and (vi) evaluating the sufficiency of the Company's legal and regulatory proceedings disclosures in the consolidated financial statements.

Revenue Recognition - Huawei Agreements

As described in Note 2 to the consolidated financial statements, in July 2020, the Company entered into a settlement agreement with Huawei to resolve their prior dispute related to their license agreement that expired on December 31, 2019 and also entered into a new long term, global patent license agreement that applies to sales of certain wireless products by Huawei beginning on January 1, 2020 (collectively "Huawei Agreements"). Amounts due under the settlement agreement are to be paid in installments by the end of June 2021 in accordance with an agreed upon payment schedule. Significant evaluation and judgment were required by management in determining the appropriate accounting for the Huawei Agreements. Management considered, among other items, (i) Huawei's commitment to perform under the Huawei Agreements (including Huawei's intent and ability to pay amounts due); (ii) Huawei's performance to date under the Huawei Agreements (including timely payments made); (iii) Huawei's current and projected financial condition (including the impact of enacted national security protection policies by the U.S. government on Huawei's business); and (iv) certain contractual protections obtained under the Huawei Agreements. Based on this evaluation, management concluded the revenue recognition criteria were met, and recorded revenues of $1.8 billion in the fourth quarter of fiscal 2020 related to the full amount due from Huawei under the settlement agreement and amounts for the March 2020 and June 2020 quarters under the new global patent license agreement. In addition, revenues recorded for the fourth quarter of fiscal 2020 included estimated royalties due from Huawei for sales made in the September 2020 quarter under the new global patent license agreement.

The principal considerations for our determination that performing procedures relating to revenue recognition for the Huawei Agreements is a critical audit matter are the significant judgment by management in determining the appropriate accounting for the Huawei Agreements, including evaluating the significant judgments related to determining Huawei's commitment to perform its contractual obligations and probability of collection under the

Huawei Agreements; this led to a high degree of auditor judgment, subjectivity and significant audit effort in performing procedures to evaluate the appropriateness of revenue recognized for the Huawei Agreements.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including the assessment and evaluation of the Huawei Agreements. These procedures also included, among others, evaluating the revenue recognized for the Huawei Agreements and the reasonableness of significant judgments related to determining Huawei's commitment to perform its contractual obligations and probability of collection under the Huawei Agreements. Evaluating the reasonableness of management’s judgments included (i) reading the Huawei Agreements; (ii) performing inquiries with key members of management who were involved in the negotiation and execution of the Huawei Agreements; (iii) evaluating Huawei’s compliance with initial payment and reporting obligations under the Huawei Agreements; (iv) evaluating management’s assessment of collectability, including the analysis of the impact of enacted national security protection policies by the U.S. government on Huawei’s business; and (v) confirming the outstanding receivable balance from the settlement agreement as of September 27, 2020 with Huawei.

/s/ PricewaterhouseCoopers LLP

San Diego, California
November 4, 2020

We have served as the Company’s auditor since 1985.

QUALCOMM Incorporated
CONSOLIDATED BALANCE SHEETS
(In millions, except par value amounts)

	September 27, 2020		September 29, 2019	
ASSETS				
Current assets:				
Cash and cash equivalents	$	6,707	$	11,839
Marketable securities		4,507		421
Accounts receivable, net		4,003		2,471
Inventories		2,598		1,400
Other current assets		704		634
Total current assets		18,519		16,765
Deferred tax assets		1,351		1,196
Property, plant and equipment, net		3,711		3,081
Goodwill		6,323		6,282
Other intangible assets, net		1,653		2,172
Other assets		4,037		3,461
Total assets	$	35,594	$	32,957
LIABILITIES AND STOCKHOLDERS' EQUITY				
Current liabilities:				
Trade accounts payable	$	2,248	$	1,368
Payroll and other benefits related liabilities		1,053		1,048
Unearned revenues		568		565
Short-term debt		500		2,496
Other current liabilities		4,303		3,458
Total current liabilities		8,672		8,935
Unearned revenues		761		1,160
Income taxes payable		1,872		2,088
Long-term debt		15,226		13,437
Other liabilities		2,986		2,428
Total liabilities		29,517		28,048
Commitments and contingencies (Note 7)				
Stockholders' equity:				
Preferred stock, $0.0001 par value; 8 shares authorized; none outstanding		—		—
Common stock and paid-in capital, $0.0001 par value; 6,000 shares authorized; 1,131 and 1,145 shares issued and outstanding, respectively		586		343
Retained earnings		5,284		4,466
Accumulated other comprehensive income		207		100
Total stockholders' equity		6,077		4,909
Total liabilities and stockholders' equity	$	35,594	$	32,957

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF OPERATIONS
(In millions, except per share data)

	Year Ended		
	September 27, 2020	**September 29, 2019**	**September 30, 2018**
Revenues:			
Equipment and services	$ 16,298	$ 14,611	$ 17,400
Licensing	7,233	9,662	5,211
Total revenues	23,531	24,273	22,611
Costs and expenses:			
Cost of revenues	9,255	8,599	10,244
Research and development	5,975	5,398	5,625
Selling, general and administrative	2,074	2,195	2,986
Other	(28)	414	3,135
Total costs and expenses	17,276	16,606	21,990
Operating income	6,255	7,667	621
Interest expense	(602)	(627)	(768)
Investment and other income, net	66	441	539
Income before income taxes	5,719	7,481	392
Income tax expense	(521)	(3,095)	(5,356)
Net income (loss)	$ 5,198	$ 4,386	$ (4,964)
Basic earnings (loss) per share	$ 4.58	$ 3.63	$ (3.39)
Diluted earnings (loss) per share	$ 4.52	$ 3.59	$ (3.39)
Shares used in per share calculations:			
Basic	1,135	1,210	1,463
Diluted	1,149	1,220	1,463

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In millions)

	Year Ended		
	September 27, 2020	**September 29, 2019**	**September 30, 2018**
Net income (loss)	$ 5,198	$ 4,386	$ (4,964)
Other comprehensive income (loss), net of income taxes:			
Foreign currency translation gains (losses)	60	(110)	(136)
Net unrealized gains (losses) on certain available-for-sale securities, net of tax (expense) benefit of ($1), $0 and ($8), respectively	22	(6)	29
Net unrealized gains (losses) on derivative instruments, net of tax (expense) benefit of ($8), ($7) and $6, respectively	29	26	(17)
Other gains (losses)	7	(19)	(3)
Other reclassifications included in net income (loss), net of tax benefit (expense) of $5, $1 and ($3), respectively	(11)	(5)	8
Total other comprehensive income (loss)	107	(114)	(119)
Comprehensive income (loss)	$ 5,305	$ 4,272	$ (5,083)

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	Year Ended		
	September 27, 2020	September 29, 2019	September 30, 2018
Operating Activities:			
Net income (loss)	$ 5,198	$ 4,386	$ (4,964)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization expense	1,393	1,401	1,561
Income tax provision (less than) in excess of income tax payments	(309)	1,976	4,481
Share-based compensation expense	1,212	1,037	883
Net gains on marketable securities and other investments	(336)	(356)	(124)
Indefinite and long-lived asset impairment charges	—	203	273
Impairment losses on marketable securities and other investments	405	135	75
Other items, net	(142)	(272)	(49)
Changes in assets and liabilities:			
Accounts receivable, net	(1,529)	1,373	734
Inventories	(1,157)	273	337
Other assets	(110)	78	24
Trade accounts payable	907	(443)	(94)
Payroll, benefits and other liabilities	528	(2,376)	1,005
Unearned revenues	(246)	(129)	(234)
Net cash provided by operating activities	5,814	7,286	3,908
Investing Activities:			
Capital expenditures	(1,407)	(887)	(784)
Purchases of debt and equity marketable securities	(6,213)	—	(5,936)
Proceeds from sales and maturities of debt and equity marketable securities	2,399	198	9,188
Acquisitions and other investments, net of cash acquired	(185)	(252)	(326)
Proceeds from other investments	100	68	222
Other items, net	43	67	17
Net cash (used) provided by investing activities	(5,263)	(806)	2,381
Financing Activities:			
Proceeds from short-term debt	2,848	5,989	11,131
Repayment of short-term debt	(2,846)	(6,492)	(11,127)
Proceeds from long-term debt	1,988	—	—
Repayment of long-term debt	(2,219)	—	(5,513)
Proceeds from issuance of common stock	329	414	603
Repurchases and retirements of common stock	(2,450)	(1,793)	(22,580)
Dividends paid	(2,882)	(2,968)	(3,466)
Payments of tax withholdings related to vesting of share-based awards	(344)	(266)	(280)
Payment of purchase consideration related to RF360 Holdings	(55)	(1,163)	(157)
Other items, net	(76)	(107)	(111)
Net cash used by financing activities	(5,707)	(6,386)	(31,500)
Effect of exchange rate changes on cash and cash equivalents	24	(32)	(41)
Net (decrease) increase in total cash and cash equivalents	(5,132)	62	(25,252)
Total cash and cash equivalents at beginning of period	11,839	11,777	37,029
Total cash and cash equivalents at end of period	$ 6,707	$ 11,839	$ 11,777

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions, except per share data)

	Year Ended		
	September 27, 2020	**September 29, 2019**	**September 30, 2018**
Total stockholders' equity, beginning balance	$ 4,909	$ 807	$ 30,725
Common stock and paid-in capital:			
Balance at beginning of period	343	—	274
Common stock issued under employee benefit plans and the related tax benefits	328	415	612
Repurchases and retirements of common stock	(1,042)	(910)	(1,536)
Share-based compensation	1,301	1,104	930
Tax withholdings related to vesting of share-based payments	(344)	(266)	(280)
Balance at end of period	586	343	—
Retained earnings:			
Balance at beginning of period	4,466	542	30,067
Cumulative effect of accounting changes	—	3,455	—
Net income (loss)	5,198	4,386	(4,964)
Repurchases and retirements of common stock	(1,408)	(883)	(21,044)
Dividends	(2,972)	(3,034)	(3,517)
Balance at end of period	5,284	4,466	542
Accumulated other comprehensive income:			
Balance at beginning of period	100	265	384
Cumulative effect of accounting changes	—	(51)	—
Other comprehensive income (loss)	107	(114)	(119)
Balance at end of period	207	100	265
Total stockholders' equity, ending balance	$ 6,077	$ 4,909	$ 807
Dividends per share announced	$ 2.54	$ 2.48	$ 2.38

See accompanying notes.

QUALCOMM Incorporated
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Significant Accounting Policies

We are a global leader in the development and commercialization of foundational technologies for the wireless industry. Our technologies and products are used in mobile devices and other wireless products, including network equipment, broadband gateway equipment, consumer electronic devices and other connected devices, including those used in the internet of things (IoT) and automotive systems for telematics and infotainment. We derive revenues principally from sales of integrated circuit products and through the licensing of our intellectual property, including patents and other rights.

Principles of Consolidation. The consolidated financial statements include the assets, liabilities and operating results of Qualcomm and its subsidiaries. During the third quarter of fiscal 2018, we eliminated the one-month reporting lag that was used to consolidate RF360 Holdings Singapore Pte., Ltd. (since its formation in fiscal 2017) to provide contemporaneous reporting within our consolidated financial statements. The effect of this change was not material to the consolidated financial statements, and therefore, the impact of eliminating the one-month reporting lag was included in our results of operations for fiscal 2018. Intercompany transactions and balances have been eliminated.

Financial Statement Preparation. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts and the disclosure of contingent amounts in our consolidated financial statements and the accompanying notes. Examples of our significant accounting estimates and policies that may involve a higher degree of judgment and complexity than others include: the estimation of sales-based royalty revenues; determining the appropriate accounting for the settlement agreement and new global patent license agreement with Huawei; the impairment of non-marketable investments; the valuation of inventories; the impairment of goodwill and long-lived assets; the recognition, measurement and disclosure of loss contingencies related to legal and regulatory proceedings; and the calculation of our income tax provision, including the recognition and measurement of uncertain tax positions. Actual results could differ from those estimates. Certain prior year amounts have been reclassified to conform to the current year presentation.

Fiscal Year. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. The fiscal year ended September 27, 2020 and September 29, 2019 each included 52 weeks. The fiscal years ended September 30, 2018 included 53 weeks.

Recently Adopted Accounting Pronouncements.

Leases: In February 2016, the Financial Accounting Standards Board (FASB) issued new accounting guidance related to leases (ASC 842) that outlines a new comprehensive lease accounting model and requires expanded disclosures. Under the new accounting guidance, we are required to recognize right-of-use assets and corresponding lease liabilities on the consolidated balance sheet. We adopted ASC 842 in the first quarter of fiscal 2020 using the modified retrospective approach, with the cumulative effect of initial adoption recorded as an adjustment to our opening consolidated balance sheet at September 30, 2019. We elected to not record leases with a term of 12 months or less on our consolidated balance sheet. In addition, we applied the package of practical expedients permitted under the transition guidance, which among other things, does not require reassessment of lease classification upon adoption. Prior period results have not been restated and continue to be reported in accordance with the accounting guidance in effect for those periods (ASC 840).

Upon adoption, we recorded $449 million of operating lease assets in other assets and $500 million of corresponding lease liabilities ($127 million recorded in other current liabilities and $373 million recorded in other liabilities). The difference between the operating lease assets and liabilities of $51 million primarily related to deferred rent liabilities that existed as of the date of adoption. Finance leases were not material for all periods presented. Adoption of the new accounting guidance did not have a material impact on our consolidated statements of operations or cash flows.

Revenue Recognition: In May 2014, the FASB issued new accounting guidance related to revenue recognition (ASC 606). We adopted ASC 606 in the first quarter of fiscal 2019 using the modified retrospective transition method only to those contracts that were not completed as of October 1, 2018. We recognized the cumulative effect of initially applying the new revenue accounting guidance as an adjustment to opening retained earnings. Prior period results have not been restated and continue to be reported in accordance with the accounting guidance in effect for those periods (ASC 605).

Income Taxes: In October 2016, the FASB issued new accounting guidance that changes the accounting for the income tax effects of intra-entity transfers of assets other than inventory. We adopted the new accounting guidance in the first quarter of fiscal 2019 using the modified retrospective transition method, with the cumulative effect of applying the new accounting guidance recognized as an adjustment to opening retained earnings of $2.6 billion, primarily as the result of establishing a deferred tax asset on the basis difference of certain intellectual property distributed from one of our foreign subsidiaries to a subsidiary in the United States in fiscal 2018.

Cash Equivalents. We consider all highly liquid investments with original maturities of 90 days or less to be cash equivalents. Cash equivalents are comprised of money market funds, certificates of deposit, commercial paper, corporate bonds and notes, certain bank time and demand deposits and government agencies' securities. The carrying amounts approximate fair value due to the short maturities of these instruments.

Marketable Securities. Marketable securities include marketable equity securities, available-for-sale debt securities and, from time-to-time, certain time deposits. We classify marketable securities as current or noncurrent based on the nature of the securities and their availability for use in current operations. Marketable securities are stated at fair value with all realized and unrealized gains and losses on investments in marketable equity securities and realized gains and losses on available-for-sale debt securities recognized in investment and other income, net. Net unrealized gains or losses on available-for-sale debt securities are recorded as a component of accumulated other comprehensive income, net of income taxes. The realized gains and losses on marketable securities are determined using the specific identification method.

Debt securities are classified as available for sale or held to maturity at the time of purchase and reevaluated at each balance sheet date. At each balance sheet date, we assess available-for-sale debt securities in an unrealized loss position to determine whether the unrealized loss is other than temporary. We consider factors including: the significance of the decline in value as compared to the cost basis; underlying factors contributing to a decline in the prices of securities in a single asset class; how long the market value of the security has been less than its cost basis; the security's relative performance versus its peers, sector or asset class; the market and economy in general; views of external investment managers; news or financial information that has been released specific to the investee; and the outlook for the overall industry in which the investee operates.

If a debt security's market value is below amortized cost and we either intend to sell the security or it is more likely than not that we will be required to sell the security before its anticipated recovery, we record an other-than-temporary impairment charge to investment and other income, net for the entire amount of the impairment. For the remaining debt securities, if an other-than-temporary impairment exists, we separate the other-than-temporary impairment into the portion of the loss related to credit factors, or the credit loss portion, which is recorded as a charge to investment and other income, net, and the portion of the loss that is not related to credit factors, or the noncredit loss portion, which is recorded as a component of other accumulated comprehensive income, net of income taxes.

Equity Method and Non-marketable Equity Investments. Equity investments for which we have significant influence, but not control, over the investee and are not the primary beneficiary of the investee's activities are accounted for under the equity method. Our share of gains and losses in equity method investments are recorded in investment and other income, net. We eliminate unrealized profit or loss related to transactions with equity method investees in relation to our ownership interest in the investee, which is recorded as a component of equity in net losses in investees in investment and other income, net. Non-marketable equity investments (for which we do not have significant influence or control) are investments without readily determinable fair values that are recorded based on initial cost minus impairment, if any, plus or minus adjustments resulting from observable price changes in orderly transactions for identical or similar securities. All gains and losses on investments in non-marketable equity securities, realized and unrealized, are recognized in investment and other income, net. We monitor equity method investments and non-marketable equity securities for events or circumstances that could indicate the investments are impaired, such as a deterioration in the investee's financial condition and business forecasts and lower valuations in recently completed or anticipated financings, and recognize a charge to investment and other income, net for the difference between the estimated fair value and the carrying value. For equity method investments, we record impairment losses in earnings only when impairments are considered other-than-temporary.

Derivatives. Our primary objectives for holding derivative instruments are to manage foreign exchange risk for certain foreign currency revenues, operating expenses, receivables and payables and to manage interest rate risk on our long-term debt. Derivative instruments are recorded at fair value and included in other current or noncurrent assets or other current or noncurrent liabilities based on their maturity dates. Counterparties to our derivative instruments are all major banking institutions.

Foreign Currency Hedges: We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative instruments, including foreign currency forward and option contracts with financial counterparties, that may or may not be designated as hedging instruments. At September 27, 2020, these derivative instruments have maturity dates of less than twelve months. Gains and losses arising from such contracts that are designated as cash flow hedging instruments are recorded as a component of accumulated other comprehensive income as gains and losses on derivative instruments, net of income taxes. The hedging gains and losses in accumulated other comprehensive income are subsequently reclassified to revenues or costs and expenses, as applicable, in the consolidated statements of operations in the same period in which the underlying transactions affect our earnings. The cash flows associated with derivative instruments designated as cash flow hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction. The fair values of our foreign currency forward and option contracts used to hedge foreign currency risk designated as cash flow hedges recorded in total assets and in total liabilities were $51 million and negligible, respectively, at September 27, 2020. The fair values of our foreign currency forward and option contracts used to hedge foreign currency risk designated as cash flow hedges recorded in total assets were negligible at September 29, 2019.

For foreign currency forward and option contracts not designated as hedging instruments, the changes in fair value are recorded in investment and other income, net in the period of change. The cash flows associated with derivative instruments not designated as hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction. The fair values of our foreign currency forward and option contracts not designated as hedging instruments were negligible at September 27, 2020 and September 29, 2019.

Interest Rate Swaps: From time to time, we manage our exposure to certain interest rate risks related to our long-term debt through the use of interest rate swaps. Such swaps allow us to effectively convert fixed-rate payments into floating-rate payments based on LIBOR. These transactions are designated as fair value hedges, and the gains and losses related to changes in the fair value of the interest rate swaps substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to changes in the market interest rates. The net gains and losses on the interest rate swaps, as well as the offsetting gains or losses on the related fixed-rate debt attributable to the hedged risks, are recognized in earnings as interest expense in the current period. The interest settlement payments associated with the interest rate swap agreements are classified as cash flows from operating activities in the consolidated statements of cash flows. During fiscal 2020, our remaining interest rate swaps related to certain of our May 2015 Notes were terminated. The aggregate fair value of our interest rate swaps related to long-term debt was negligible at September 29, 2019.

Gross Notional Amounts: The gross notional amounts of our foreign currency and interest rate derivatives by instrument type were as follows (in millions):

	September 27, 2020	September 29, 2019
Forwards	$ 1,096	$ 878
Options	789	176
Swaps	—	1,750
	$ 1,885	$ 2,804

The gross notional amounts of our derivatives by currency were as follows (in millions):

	September 27, 2020	September 29, 2019
Chinese renminbi	$ 1,058	$ 463
Indian rupee	595	440
Japanese yen	33	12
United States dollar	199	1,889
	$ 1,885	$ 2,804

Other Hedging Activities. We have designated $1.4 billion of foreign currency-denominated liabilities, excluding accrued interest, related to the fines imposed by the European Commission (Note 7) as hedges of our net investment in certain foreign subsidiaries as of September 27, 2020 and September 29, 2019. Gains and losses arising from the portion of these balances that are designated as net investment hedges are recorded in accumulated other comprehensive income as a component of the foreign currency translation adjustment.

Fair Value Measurements. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants as of the measurement date. Applicable accounting guidance provides an established hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs that market participants would use in valuing the asset or liability and are developed based on market data obtained from sources independent of us. Unobservable inputs are inputs that reflect our assumptions about the factors that market participants would use in valuing the asset or liability. There are three levels of inputs that may be used to measure fair value:

- Level 1 includes financial instruments for which quoted market prices for identical instruments are available in active markets.
- Level 2 includes financial instruments for which there are inputs other than quoted prices included within Level 1 that are observable for the instrument.
- Level 3 includes financial instruments for which fair value is derived from valuation techniques in which one or more significant inputs are unobservable, including our own assumptions.

Assets and liabilities measured at fair value are classified based on the lowest level of input that is significant to the fair value measurement. We review the fair value hierarchy classification on a quarterly basis. Changes in the observability of valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy. We recognize transfers into and out of levels within the fair value hierarchy at the end of the fiscal month in which the actual event or change in circumstances that caused the transfer to occur.

Cash Equivalents and Marketable Securities: With the exception of auction rate securities, we obtain pricing information from quoted market prices, pricing vendors or quotes from brokers/dealers. We conduct reviews of our primary pricing vendors to determine whether the inputs used in the vendor's pricing processes are deemed to be observable. The fair value for interest-bearing securities includes accrued interest.

The fair value of U.S. Treasury securities and government-related securities, corporate bonds and notes and common stock is generally determined using standard observable inputs, including reported trades, quoted market prices, matrix pricing, benchmark yields, broker/dealer quotes, issuer spreads, two-sided markets and/or benchmark securities.

The fair value of mortgage- and asset-backed securities is derived from the use of matrix pricing (prices for similar securities) or, in some cases, cash flow pricing models with observable inputs, such as contractual terms, maturity, credit rating and/or securitization structure to determine the timing and amount of future cash flows.

The fair value of auction rate securities is estimated using a discounted cash flow model that incorporates transaction details, such as contractual terms, maturity and timing and amount of future cash flows, as well as assumptions related to liquidity, default likelihood and recovery, the future state of the auction rate market and credit valuation adjustments of market participants. Though most of the securities we hold are pools of student loans guaranteed by the United States government, prepayment speeds and illiquidity discounts are considered significant unobservable inputs, and therefore, auction rate securities are included in Level 3.

Derivative Instruments: Derivative instruments that are traded on an exchange are valued using quoted market prices and are included in Level 1. Derivative instruments that are not traded on an exchange are valued using conventional calculations/models that are primarily based on observable inputs, such as foreign currency exchange rates, volatilities and interest rates, and therefore, such derivative instruments are included in Level 2.

Other Investments and Other Liabilities: Other investments and other liabilities included in Level 1 are comprised of our deferred compensation plan liabilities and related assets, which consist of mutual funds and are included in other assets. Gains and losses on the revaluation of our deferred compensation plan assets are recorded in investment and other income, net (Note 2) and are not allocated to our segments. Corresponding offsetting amounts related to the revaluation of our deferred compensation plan liabilities are included in unallocated operating expenses (Note 8). Other investments and other liabilities included in Level 3 are primarily comprised of convertible debt instruments issued by private companies. The fair value of convertible debt instruments is estimated based on the estimated timing and amount of future cash flows, as well as assumptions related to liquidity, default likelihood and recovery. The inputs we use to estimate the fair values of the convertible debt instruments are generally unobservable, and therefore, they are included in Level 3.

Inventories. Inventories are valued at the lower of cost and net realizable value using the first-in, first-out method. Recoverability of inventories is assessed based on review of future customer demand that considers multiple factors, including committed purchase orders from customers as well as purchase commitment projections provided by customers and our own forecasts of customer demand, among other factors. This valuation also requires us to make judgments and assumptions based on information currently available about market conditions, including competition, product pricing, product life cycle, development plans and other broader market conditions that may impact customer demand, such as the coronavirus (COVID-19) pandemic in fiscal 2020 that negatively impacted consumer demand for certain devices that incorporate our products. As we move to smaller geometry process technologies, the manufacturing lead-time increases, resulting in an increased reliance on our own forecasts of customer demand, rather than our customers' forecasts. If we overestimate demand for our products, the amount of our loss will be impacted by our contractual ability to reduce inventory purchases from our suppliers. Our assumptions of future product demand are inherently uncertain, and changes in our estimates and assumptions may cause us to record additional write-downs in the future if demand forecasted for specific products is greater than actual demand.

Property, Plant and Equipment. Property, plant and equipment are recorded at cost and depreciated or amortized using the straight-line method over their estimated useful lives. Upon the retirement or disposition of property, plant and equipment, the related cost and accumulated depreciation or amortization are removed, and a gain or loss is recorded, when appropriate. Buildings on owned land are depreciated over 30 years, and building improvements are depreciated over 15 years. Leasehold improvements and buildings on leased land are amortized over the shorter of their estimated useful lives, not to exceed 15 years and 30 years, respectively, or the remaining term of the related lease. Other property, plant and equipment have useful lives ranging from 2 to 25 years. Maintenance, repairs and minor renewals or betterments are charged to expense as incurred.

Operating Leases. As a result of the adoption of ASC 842, we revised our operating lease accounting policy beginning in fiscal 2020 as follows.

Operating lease assets and liabilities are recognized for leases with lease terms greater than 12 months based on the present value of the future lease payments over the lease term at the commencement date. Operating leases are included in other assets, other current liabilities and other liabilities on our consolidated balance sheet. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise such option. We account for substantially all lease and related non-lease components together as a single lease component. Operating lease expense is recognized on a straight-line basis over the lease term.

Goodwill and Other Intangible Assets. Goodwill represents the excess of purchase price over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Acquired intangible assets other than goodwill are amortized over their useful lives unless the lives are determined to be indefinite. For intangible assets purchased in a business combination, the estimated fair values of the assets received are used to establish their recorded values. For intangible assets acquired in a nonmonetary exchange, the estimated fair values of the assets transferred (or the estimated fair values of the assets received, if more clearly evident) are used to establish their recorded values, unless the values of neither the assets received nor the assets transferred are determinable within reasonable limits, in which case the assets received are measured based on the carrying values of the assets transferred. Valuation techniques consistent with the market approach, income approach and/or cost approach are used to measure fair value. An estimate of fair value can be affected by many assumptions that require significant judgment. For example, the income approach generally requires us to use assumptions to estimate future cash flows including those related to total addressable market, pricing and share forecasts, competition, technology obsolescence, future tax rates and discount rates. Our estimate of the fair value of certain assets may differ materially from that determined by others who use different assumptions or utilize different business models and from the future cash flows actually realized.

Impairment of Goodwill, Other Indefinite-Lived Assets and Long-Lived Assets. Goodwill and other indefinite-lived intangible assets are tested annually for impairment in the fourth fiscal quarter and in interim periods if events or changes in circumstances indicate that the assets may be impaired. If a qualitative assessment is used and we determine that the fair value of a reporting unit or indefinite-lived intangible asset is more likely than not (i.e., a likelihood of more than 50%) less than its carrying amount, a quantitative impairment test will be performed. If goodwill is quantitatively assessed for impairment and a reporting unit's carrying value exceeds its fair value, the difference is recorded as an impairment. Other indefinite-lived intangible assets are quantitatively assessed for impairment, if necessary, by comparing their estimated fair values to their carrying values. If the carrying value exceeds the fair value, the difference is recorded as an impairment. Our judgments regarding the existence of impairment indicators and future cash flows related to goodwill and long-lived assets may be based on operational performance of our businesses, market conditions, expected selling price and/or other factors. Although there are inherent uncertainties in this assessment process, the estimates and assumptions we use, including estimates of future cash flows and discount rates, are consistent with our internal planning, when appropriate. If these estimates or their related assumptions change in the future, we may be required to record an impairment charge on a portion or all of our goodwill and/or long-lived assets. Furthermore, we cannot predict the occurrence of future impairment-triggering events nor the impact such events might have on our reported asset values. Future events could cause us to conclude that impairment indicators exist, and that goodwill associated with our acquired businesses are impaired.

Long-lived assets, such as property, plant and equipment and intangible assets subject to amortization, are reviewed for impairment when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Recoverability of assets to be held and used is measured by comparing the carrying amount of an asset or asset group to estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset or asset group exceeds its estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset or asset group exceeds the estimated fair value of the asset or asset group. Long-lived assets to be disposed of by sale are reported at the lower of their carrying amounts or their estimated fair values less costs to sell and are not depreciated.

Revenue Recognition. We derive revenues principally from sales of integrated circuit products and licensing of our intellectual property. We also generate revenues from licensing system software and by performing development and other services and from other product sales. The timing of revenue recognition and the amount of revenue actually recognized in each case depends upon a variety of factors, including the specific terms of each arrangement and the nature of our performance obligations.

Revenues from sales of our products are recognized upon transfer of control to the customer, which is generally at the time of shipment. Revenues from providing services are typically recognized over time as our performance obligation is satisfied. Revenues from providing services and licensing system software were each less than 5% of total revenues for all periods presented.

We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Licensees pay royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets, laptops and smartwatches, and provide for a maximum royalty amount payable per device. We estimate and recognize sales-based royalties on such licensed products in the period in which the associated sales occur, considering all relevant information (historical, current and forecasted) that is reasonably available to us. Our estimates of sales-based royalties are based largely on preliminary royalty estimates provided by our licensees and, to a lesser extent, an assessment of the volume of devices supplied into the market that incorporate or use our licensed intellectual property, combined with an estimate of the mix of such sales on a licensee-by-licensee basis, as well as the licensees' average wholesale prices of such products. We have recognized immaterial differences between preliminary royalty estimates provided to us by licensees and actual amounts reported and paid by licensees, which are generally received the following quarter, as licensees have not completed their royalty reporting process at the time estimates are provided to us, and in certain cases, they do not provide all necessary information in order for us to calculate an estimate of royalties due, which requires us to independently estimate certain information. We also consider in our estimates of sales-based royalties any changes in pricing we plan or expect to make and certain constraints on our ability to estimate such royalties. As a result of recognizing revenues in the period in which the licensees' sales occur using estimates, adjustments to revenues are required in subsequent periods to reflect changes in estimates as new information becomes available, primarily resulting from actual amounts reported by our licensees.

License agreements that require payment of license fees contain a single performance obligation that represents ongoing access to a portfolio of intellectual property over the license term since such agreements provide the licensee the right to access a portfolio of intellectual property that exists at inception of the license agreement and to updates and new intellectual property that is added to the licensed portfolio during the term of the agreement that are highly interdependent or interrelated. Since we expect to expend efforts to develop and transfer updates to our licensed portfolio on an even basis, license fees are recognized as revenues on a straight-line basis over the estimated period of benefit of the license to the licensee.

We account for a contract with a customer/licensee when it is legally enforceable, the parties are committed to perform their respective obligations, the rights of the parties regarding the goods and/or services to be transferred are identified, payment terms are identified, the contract has commercial substance and collectability of substantially all of the consideration is probable. If all such conditions are not met, revenues and any associated receivables are generally not recognized until such time that the required conditions are met. Cash collected from customers prior to a contract existing is recorded to other customer-related liabilities in other current liabilities.

From time to time, regulatory authorities investigate our business practices, particularly with respect to our licensing business, and institute proceedings against us. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others, the loss of our ability to enforce one or more of our patents; injunctions; monetary damages or fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed original equipment manufacturers (OEMs) or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. Additionally, from time to time, companies initiate various strategies in an attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property, which may include disputing, underreporting, underpaying, not reporting and/or not paying royalties owed to us under their license agreements with us, or reporting to us in a manner that is not in compliance with their contractual obligations. In such cases, we estimate and recognize licensing revenues only when we have a contract, as defined in the revenue recognition guidance, which includes, among other items, evaluating whether our license agreements remain valid and enforceable and evaluating licensees' conduct and whether they remain committed to perform their respective obligations. We also estimate and recognize licensing revenues only to the extent it is probable that a significant reversal of cumulative revenues recognized will not occur, which includes, among other items, determining the expected impact, if any, to revenues of any license agreements that may be renegotiated and/or are newly entered into. We analyze the risk of a significant revenue reversal considering both the likelihood and magnitude of the reversal and, if necessary, constrain the amount of estimated revenues recognized in order to mitigate this risk, which may result in recognizing revenues less than amounts contractually owed to us. These aforementioned estimates may require significant judgment.

We measure revenues (including our estimates of sales-based royalties) based on the amount of consideration we expect to receive in exchange for products or services. We record reductions to revenues for customer incentive arrangements, including volume-related and other pricing rebates and cost reimbursements for marketing and other activities involving certain of our products and technologies, in the period that the related revenues are earned. The charges for such arrangements are recorded as a reduction to accounts receivable, net or as other current liabilities based on whether we have the intent and contractual right of offset. Certain of these charges are considered variable consideration and are included in the transaction price primarily based on estimating the most likely amount expected to be provided to the customer/licensee.

Revenues recognized from sales of our products and sales-based royalties are generally included in accounts receivable, net (including unbilled receivables) based on our unconditional right to payment for satisfied or partially satisfied performance obligations.

Concentrations. A significant portion of our revenues are concentrated with a small number of customers/licensees of our QCT and QTL segments. Revenues from four customers/licensees comprised 19%, 12%, 10% and 10% of total consolidated revenues in fiscal 2020. Revenues from three customers/licensees comprised 15%, 10% and 24% of total consolidated revenues in fiscal 2019 and 16%, 11% and 11% in fiscal 2018. Revenues in fiscal 2020 were positively impacted by the settlement of our prior dispute with Huawei (Note 8). Revenues in fiscal 2018 were negatively impacted by our prior dispute with Apple and its contract manufacturers.

We rely on sole- or limited-source suppliers for some products, particularly products in the QCT segment, subjecting us to possible shortages of raw materials or manufacturing capacity. The loss of a supplier or the inability of a supplier to meet performance or quality specifications or delivery schedules could harm our ability to meet our delivery obligations and/or negatively impact our revenues, business operations and ability to compete for future business.

Shipping and Handling Costs. Costs incurred for shipping and handling are included in cost of revenues. Amounts billed to a customer for shipping and handling are reported as revenues.

Share-Based Compensation. Share-based compensation expense for equity-classified awards, principally related to restricted stock units (RSUs), is measured at the grant date, or at the acquisition date for awards assumed in business combinations, based on the estimated fair value of the award and is recognized over the employee's requisite service period.

The fair values of RSUs are estimated based on the fair market values of the underlying stock on the dates of grant or dates the RSUs are assumed. Share-based compensation expense is adjusted to exclude amounts related to share-based awards that are expected to be forfeited.

Legal and Regulatory Proceedings. We are currently involved in certain legal and regulatory proceedings. Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Investigations by antitrust and trade regulation agencies are not conducted in a consistent manner across jurisdictions. Further, each country and agency has different sets of laws, rules and regulations, both substantive and procedural, as well as different legal principles, theories and potential remedies, and some agencies may seek to use the investigation to advance domestic policy goals. Depending on the jurisdiction, these investigations can involve non-transparent procedures under which we may not receive access to evidence relied upon by the enforcement agency or that may be exculpatory and may not be informed of the specific legal theories or evidence considered or relied upon by the agency. Unlike in civil litigation in the United States, in foreign proceedings, we may not be entitled to discovery or depositions, allowed to cross-examine witnesses or confront our accusers. As a result, we may not be aware of, and may not be entitled to know, all allegations against us, or the information or documents provided to, or discovered or prepared by, the agency. Accordingly, we may have little or no idea what an agency's intent is with respect to liability, penalties or the timing of a decision. In many cases the agencies are given significant discretion, and any available precedent may have limited, if any, predictive value in their jurisdictions, much less in other jurisdictions. Accordingly, we cannot predict the outcome of these matters. A broad range of remedies with respect to our business practices that are deemed to violate applicable laws are potentially available. These remedies may include, among others, injunctions, monetary damages or fines or other orders to pay money and the issuance of orders to cease certain conduct and/or to modify our business practices.

If there is at least a reasonable possibility that a material loss may have been incurred associated with pending legal and regulatory proceedings, we disclose such fact, and if reasonably estimable, we provide an estimate of the possible loss or range of possible loss. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of loss can be reasonably estimated with no best estimate in the range, we record the minimum estimated liability. As additional information becomes available, we assess the potential liability related to pending legal and regulatory proceedings and revise our estimates and update our disclosures accordingly. Significant judgment is required in both the determination of probability and the determination as to whether a loss is reasonably estimable. Our legal costs associated with defending ourself are recorded to expense as incurred.

Foreign Currency. Certain foreign subsidiaries use a local currency as the functional currency. Resulting translation gains or losses are recorded as a component of accumulated other comprehensive income. Transaction gains or losses related to balances denominated in a currency other than the functional currency are recognized in the consolidated statements of operations.

Income Taxes. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. We record a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. We include interest and penalties related to income taxes, including unrecognized tax benefits, within income tax expense. We classify all deferred tax assets and liabilities as noncurrent in the consolidated balance sheets.

Our income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service (IRS) and other tax authorities. In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. While we believe we have appropriate support for the positions taken on our tax returns, we regularly assess the potential outcomes of examinations by tax authorities in determining the adequacy of our provision for income taxes. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known.

We recognize excess tax benefits and shortfall tax detriments associated with share-based awards in the consolidated statements of operations, as a component of income tax expense, when realized.

We are subject to income taxes in the United States and numerous foreign jurisdictions, and the assessment of our income tax positions involves dealing with uncertainties in the application of complex tax laws and regulations in various taxing jurisdictions. In addition, the application of tax laws and regulations is subject to legal and factual interpretation, judgment and uncertainty. Tax laws and regulations themselves are subject to change as a result of changes in fiscal policy, changes in legislation, the evolution of regulations and court rulings. Significant judgments and estimates are required in determining our provision for income taxes, including those related to special deductions such as FDII (foreign-derived intangible income), tax incentives, intercompany research and development cost-sharing arrangements, transfer pricing, tax credits and the realizability of deferred tax assets. While we believe we have appropriate support for the positions we have taken or that we plan to take on our tax returns, we regularly assess the potential outcomes of examinations by taxing authorities in determining the adequacy of our provision for income taxes. Therefore, the actual liability for U.S. or foreign taxes may be materially different from our estimates, which could result in the need to record additional tax liabilities or potentially reverse previously recorded tax liabilities. We are participating in the Internal Revenue Service (IRS) Compliance Assurance Process program whereby we endeavor to agree with the IRS on the treatment of all issues prior to filing our federal return. A benefit of participation in this program is that post-filing adjustments by the IRS are less likely to occur.

Earnings (Loss) Per Common Share. Basic earnings (loss) per common share is computed by dividing net income (loss) by the weighted-average number of common shares outstanding during the reporting period. Diluted earnings per common share is computed by dividing net income by the combination of the weighted-average number of dilutive common share equivalents, comprised of shares issuable under our share-based compensation plans and shares subject to accelerated share repurchase agreements, if any, and the weighted-average number of common shares outstanding during the reporting period. Due to the net loss in fiscal 2018, all of the common share equivalents issuable under share-based compensation plans and the accelerated share repurchase agreements we entered into in fiscal 2018 had an anti-dilutive effect and were therefore excluded from the computation of diluted loss per share. The following table provides information about the diluted earnings per share calculation (in millions):

	2020	2019	2018
Dilutive common share equivalents included in diluted shares	14	10	—
Shares of common stock equivalents not included because the effect would be anti-dilutive or certain performance conditions were not satisfied at the end of the period	1	8	51

Recent Accounting Pronouncements Not Yet Adopted.

Financial Assets: In June 2016, the FASB issued new accounting guidance that changes the accounting for recognizing impairments of financial assets. Under the new accounting guidance, credit losses for financial assets held at amortized cost (such as accounts receivable) will be estimated based on expected losses rather than the current incurred loss impairment model. Our historical credit losses for accounts receivable have been immaterial. The new accounting guidance also eliminates the concept of other-than-temporary impairment and requires credit losses related to available-for-sale debt securities to be recorded through an allowance for credit losses rather than as a reduction in the amortized cost basis of the securities. These changes will result in earlier recognition of credit losses, if any. The new accounting guidance generally requires the modified retrospective transition method, with the cumulative effect of applying the new accounting guidance recognized as an adjustment to opening retained earnings in the year of adoption, except for certain financial assets where the prospective transition method is required, such as available-for-sale debt securities for which an other-than-temporary impairment has been recorded. We will adopt the new accounting guidance in the first quarter of fiscal 2021. We do not expect this new accounting guidance will have a material impact to our consolidated financial statements at adoption. The future impact of such accounting guidance will largely depend on the future composition and credit quality of our investment portfolio and accounts receivable, as well as future economic conditions.

Note 2. Composition of Certain Financial Statement Items

Accounts Receivable (in millions)

	September 27, 2020	September 29, 2019
Trade, net of allowances for doubtful accounts	$ 2,687	$ 1,046
Unbilled	1,305	1,411
Other	11	14
	$ 4,003	$ 2,471

Accounts receivable at September 27, 2020 included $1.3 billion, excluding the impact of foreign withholding taxes, from Huawei related to the remaining amounts due under the settlement agreement and estimated royalties for sales made in the September 2020 quarter. In July 2020, we entered into a settlement agreement with Huawei to resolve our prior dispute related to the license agreement that expired on December 31, 2019. We also entered into a new long-term, global patent license agreement that applies to sales of certain wireless products by Huawei beginning on January 1, 2020. Amounts due under the settlement agreement are to be paid in installments by the end of June 2021 in accordance with an agreed upon payment schedule. In the fourth quarter of fiscal 2020, Huawei paid the first installment under the settlement agreement and the royalties due for the March 2020 and June 2020 quarters under the new global patent license agreement.

Significant evaluation and judgment were required in determining the appropriate accounting for the settlement agreement and new global patent license agreement with Huawei. We considered, among other items, Huawei's commitment to perform under such agreements (including Huawei's intent and ability to pay amounts due), Huawei's performance to date under the agreements (including timely payments made), Huawei's current and projected financial condition (including the impact of enacted national security protection policies by the U.S. government on Huawei's business) and certain contractual protections that we obtained under these agreements.

Based on this evaluation, we concluded that the revenue recognition criteria were met, and we recorded revenues of $1.8 billion in the fourth quarter of fiscal 2020 related to the full amount due from Huawei under the settlement agreement and amounts paid for the March 2020 and June 2020 quarters under the new global patent license agreement. In addition, QTL results for the fourth quarter of fiscal 2020 included estimated royalties due from Huawei for sales made in the September 2020 quarter under the new global patent license agreement.

Although we believe that the judgments supporting our assessment are reasonable based on facts and factors currently known, our judgments, including those discussed in the preceding paragraph, as it relates to future events are inherently uncertain and actual results and outcomes may differ from the results and outcomes currently anticipated.

Inventories (in millions)

	September 27, 2020	September 29, 2019
Raw materials	$ 94	$ 77
Work-in-process	1,155	667
Finished goods	1,349	656
	$ 2,598	$ 1,400

Property, Plant and Equipment (in millions)

	September 27, 2020	September 29, 2019
Land	$ 173	$ 170
Buildings and improvements	1,606	1,546
Computer equipment and software	1,427	1,356
Machinery and equipment	5,095	4,007
Furniture and office equipment	90	86
Leasehold improvements	320	301
Construction in progress	134	182
	8,845	7,648
Less accumulated depreciation and amortization	(5,134)	(4,567)
	$ 3,711	$ 3,081

Depreciation and amortization expense related to property, plant and equipment for fiscal 2020, 2019 and 2018 was $772 million, $674 million and $776 million, respectively.

Goodwill and Other Intangible Assets. We allocate goodwill to our reporting units for impairment testing purposes. The following table presents the goodwill allocated to our reportable and nonreportable segments, as described in Note 8, as well as the changes in the carrying amounts of goodwill during fiscal 2020 and 2019 (in millions):

	QCT	QTL	Nonreportable Segments	Total
Balance at September 30, 2018	$ 5,587	$ 718	$ 193	$ 6,498
Acquisitions	18	—	—	18
Impairments (Note 9)	—	—	(146)	(146)
Other (1)	(40)	(1)	(47)	(88)
Balance at September 29, 2019 (2)	5,565	717	—	6,282
Other (1)	40	1	—	41
Balance at September 27, 2020 (2)	$ 5,605	$ 718	$ —	$ 6,323

(1) In fiscal 2020, changes in goodwill resulted from certain foreign currency translation adjustments. In fiscal 2019, changes in goodwill amounts resulted from the sale of our mobile health nonreportable segment, foreign currency translation and purchase accounting adjustments.

(2) Cumulative goodwill impairments were $812 million at both September 27, 2020 and September 29, 2019.

The components of other intangible assets, net were as follows (in millions):

	September 27, 2020			September 29, 2019		
	Gross Carrying Amount	Accumulated Amortization	Weighted-average amortization period (years)	Gross Carrying Amount	Accumulated Amortization	Weighted-average amortization period (years)
Technology-based	$ 5,556	$ (3,958)	11	$ 5,958	$ (3,851)	10
Other	105	(50)	9	134	(69)	9
	$ 5,661	$ (4,008)	11	$ 6,092	$ (3,920)	10

All of these intangible assets are subject to amortization and the amortization expense related to these intangible assets was $621 million, $727 million and $785 million for fiscal 2020, 2019 and 2018, respectively. Amortization expense related to these intangible assets is expected to be $519 million, $422 million, $295 million, $136 million and $111 million for each of the five years from fiscal 2021 through 2025, respectively, and $170 million thereafter. At September 27, 2020 and September 29, 2019, all acquired in-process research and development projects were completed and are being amortized over their useful lives.

Equity Method and Non-marketable Equity Investments. The carrying values of our equity method and non-marketable equity investments are recorded in other noncurrent assets and were as follows (in millions):

	September 27, 2020	September 29, 2019
Equity method investments	$ 161	$ 343
Non-marketable equity investments	821	787
	$ 982	$ 1,130

Beginning in the second quarter of fiscal 2020, the rapid, global spread of COVID-19 and associated containment and mitigation measures have negatively impacted the condition of economies and financial markets globally, which has negatively impacted certain companies in which we hold non-marketable equity investments, including those accounted for under the equity method and, to a lesser extent, non-marketable debt securities. Since the second quarter of fiscal 2020, significant evaluation and judgments were required in determining if the negative effects of COVID-19 indicated that such investments were impaired, and if so, the extent of such impairment. This included, among other items: (i) assessing the business impacts that COVID-19 had, and we currently expect to have in the future, on our investees, including taking into consideration the investee's industry and geographic location and the impact to its customers, suppliers and employees, as applicable, (ii) evaluating the investees' ability to respond to the impacts of COVID-19, including any significant deterioration in the investee's financial condition and cash flows, as well as assessing liquidity and/or going concern risks and (iii) considering any appreciation in fair value that has not been recognized in the carrying values of such investments. Based on this evaluation, certain of our investments were impaired and written down to their estimated fair values in fiscal 2020 (a significant portion of which related to the full impairment of our investment in OneWeb, who filed for bankruptcy in the second quarter of fiscal 2020). Although we believe that our judgments supporting our impairment assessments are reasonable (which rely on information reasonably available to us), the COVID-19 pandemic makes it challenging for us and our investees to estimate the future performance of our investees' businesses. As circumstances change and/or new information becomes available, we may be required to record additional impairments in subsequent periods.

Revenues from certain services contracts with OneWeb were $36 million, $152 million and $100 million in fiscal 2020, 2019 and 2018, respectively.

During fiscal 2019, non-marketable debt and equity securities (non-cash consideration) with an aggregate estimated fair value of $98 million were received related to a development contract with OneWeb that was recognized as revenues in fiscal 2019. In addition, during fiscal 2019, non-marketable equity securities (non-cash consideration) with an estimated fair value of $53 million were received in connection with the sale of certain assets as part of the Cost Plan that concluded in fiscal 2019.

Other Current Liabilities (in millions)

	September 27, 2020	September 29, 2019
Customer incentives and other customer-related liabilities	$ 1,721	$ 1,129
Accrual for EC fines (Note 7)	1,487	1,379
Income taxes payable	549	480
Other	546	470
	$ 4,303	$ 3,458

Accumulated Other Comprehensive Income. Changes in the components of accumulated other comprehensive income, net of income taxes, in stockholders' equity during fiscal 2020 were as follows (in millions):

	Foreign Currency Translation Adjustment	Noncredit Other-than-Temporary Impairment Losses and Subsequent Changes in Fair Value for Certain Available-for-Sale Debt Securities	Net Unrealized Gains (Losses) on Other Available-for-Sale Debt Securities	Net Unrealized Gain (Loss) on Derivative Instruments	Other Gains (Losses)	Total Accumulated Other Comprehensive Income
Balance at September 29, 2019	$ (99)	$ 23	$ 186	$ 8	$ (18)	$ 100
Other comprehensive income before reclassifications	60	—	22	29	7	118
Reclassifications from accumulated other comprehensive income	7	—	(2)	(16)	—	(11)
Other comprehensive income	67	—	20	13	7	107
Balance at September 27, 2020	$ (32)	$ 23	$ 206	$ 21	$ (11)	$ 207

Reclassifications from accumulated other comprehensive income related to derivative instruments were $16 million during fiscal 2020 and negligible for all other periods presented, and were recorded in revenues, cost of revenues, research and development expenses and selling, general and administrative expenses. Reclassifications from accumulated other comprehensive income in fiscal 2019 included adjustments of $51 million to the opening retained earnings balance as a result of the adoption of new accounting guidance in 2019 related to financial instruments and hedge instruments. Other reclassifications from accumulated other comprehensive income related to available-for-sale securities and foreign currency translation adjustments were negligible for all periods presented.

Revenues. We disaggregate our revenues by segment (Note 8), by type of product and services (as presented on our consolidated statement of operations) and, for our QCT segment by revenue stream, which is based on industry segment or application in which our products are sold (as presented below). In certain cases, the determination of QCT revenues by industry segment or application requires the use of certain assumptions. Substantially all of QCT's revenues consist of equipment revenues that are recognized at a point in time, and substantially all of QTL's revenues represent licensing revenues that are recognized over time and are principally from royalties generated through our licensees' sales of mobile handsets. QCT revenue streams were as follows (in millions):

	2020	2019
Handsets	$ 10,461	$ 9,793
RFFE (1)	2,362	1,478
Automotive	644	640
IoT (2)	3,026	2,728
Total QCT revenues	$ 16,493	$ 14,639

(1) Includes all revenues from sales of RFFE integrated circuit products (substantially all of which are used in handsets).

(2) Internet of Things (IoT) revenues primarily include products sold for use in cellular and non-cellular connected devices within the following industry segments or applications: consumer, computing, industrial, fixed wireless broadband, voice and music and wireless networking.

Revenues recognized from performance obligations satisfied (or partially satisfied) in previous periods were $1.5 billion for fiscal 2020, and primarily related to licensing revenues recognized in the fourth quarter of fiscal 2020 (a portion of which was attributable to fiscal 2020) resulting from the settlement with Huawei, and to a lesser extent, QTL royalty revenues recognized related to devices sold in prior periods (including adjustments to prior period royalty estimates, in part based on actual reporting of royalties by our licensees) and certain QCT customer incentives. Revenues recognized from performance obligations satisfied (or partially satisfied) in previous periods were $4.1 billion for fiscal 2019 and primarily related to licensing revenues recognized in the third quarter of fiscal 2019 (a portion of which was attributable to fiscal 2019) resulting from the settlement with Apple and its contract manufacturers in April 2019.

Unearned revenues (which are considered contract liabilities) consist primarily of license fees for intellectual property with continuing performance obligations. In fiscal 2020 and fiscal 2019, we recognized revenues of $540 million and $481 million, respectively, that were recorded as unearned revenues at September 29, 2019 and October 1, 2018, respectively.

Remaining performance obligations, substantially all of which are included in unearned revenues, represent the aggregate amount of the transaction price of certain customer contracts yet to be recognized as revenues as of the end of the reporting period and exclude revenues related to (a) contracts that have an original expected duration of one year or less and (b) sales-based royalties (i.e., future royalty revenues) pursuant to our license agreements. Our remaining performance obligations are primarily comprised of certain customer contracts for which QTL received license fees upfront. At September 27, 2020, we had $1.4 billion of remaining performance obligations, of which $581 million, $493 million, $234 million, $64 million and $26 million is expected to be recognized as revenues for each of the subsequent five years from fiscal 2021 through 2025, respectively, with no amounts expected thereafter.

Share-based Compensation Expense. Total share-based compensation expense, related to all of our share-based awards, was comprised as follows (in millions):

	2020	2019	2018
Cost of revenues	$ 34	$ 35	$ 38
Research and development	872	725	594
Selling, general and administrative	306	277	251
Share-based compensation expense before income taxes	1,212	1,037	883
Related income tax benefit	(238)	(184)	(140)
	$ 974	$ 853	$ 743

Other Income, Costs and Expenses. Other expenses in fiscal 2020 consisted of $28 million in gains related to a favorable legal settlement.

Other expenses in fiscal 2019 consisted of a $275 million charge related to a fine imposed by the European Commission (EC) related to the Icera complaint (2019 EC fine) (Note 7) and $213 million in net charges related to our Cost Plan that concluded in fiscal 2019, partially offset by a $43 million gain due to the partial recovery of a fine imposed in 2009 resulting from our appeal of the Korea Fair Trade Commission (KFTC) decision and a $31 million gain related to a favorable legal settlement.

Other expenses in fiscal 2018 consisted of a $2.0 billion charge related to a fee paid in connection with the termination of our purchase agreement to acquire NXP Semiconductors N.V., a $1.2 billion charge for the fine imposed by the EC related to an investigation (2018 EC fine) (Note 7) and $629 million in restructuring and restructuring-related charges related to our Cost Plan, partially offset by a $676 million benefit related to the settlement of the Taiwan Fair Trade Commission (TFTC) investigation.

Total restructuring and restructuring-related charges related to the Cost Plan were as follows (in millions):

	2019	2018 (1)	Total
Restructuring-related charges (2)	$ 151	$ 334	$ 485
Restructuring charges (3)	62	353	415
	$ 213	$ 687	$ 900

(1) During fiscal 2018, we recorded restructuring and restructuring-related charges of $629 million in other expenses and charges of $58 million in investment and other income, net.

(2) Restructuring-related charges primarily related to asset impairment charges in fiscal 2019 and 2018 and also included a $52 million net gain in fiscal 2019 from the sale of certain assets related to wireless electric vehicle charging applications and the sale of our mobile health nonreportable segment, as well as a $41 million gain in fiscal 2018 resulting from fair value adjustments of certain contingent consideration related to a business combination.

(3) Restructuring charges primarily consisted of severance and consulting costs in fiscal 2019 and 2018, which were payable in cash.

Investment and Other Income, Net (in millions)

	2020	2019	2018
Interest and dividend income	$ 156	$ 300	$ 611
Net gains on marketable securities	198	295	21
Net gains on other investments	108	68	83
Net gains on deferred compensation plan assets	47	9	34
Impairment losses on other investments	(405)	(135)	(75)
Net gains (losses) on derivative instruments	8	(14)	(27)
Equity in net losses of investees	(21)	(93)	(145)
Net (losses) gains on foreign currency transactions	(25)	11	37
	$ 66	$ 441	$ 539

Note 3. Income Taxes

The components of the income tax provision were as follows (in millions):

	2020	2019	2018
Current provision (benefit):			
Federal	$ 210	$ 1,563	$ 2,559
State	1	2	(1)
Foreign	526	(407)	777
	737	1,158	3,335
Deferred provision (benefit):			
Federal	(192)	2,037	1,846
State	2	17	1
Foreign	(26)	(117)	174
	(216)	1,937	2,021
	$ 521	$ 3,095	$ 5,356

The foreign component of the income tax provision (benefit) included foreign withholding taxes on royalty revenues included in U.S. earnings.

The components of income before income taxes by U.S. and foreign jurisdictions were as follows (in millions):

	2020	2019	2018
United States	$ 5,004	$ 7,042	$ (1,834)
Foreign	715	439	2,226
	$ 5,719	$ 7,481	$ 392

In fiscal 2018, the foreign component of income before income taxes in foreign jurisdictions primarily consisted of income earned in Singapore.

The following is a reconciliation of the expected statutory federal income tax provision to our actual income tax provision (in millions, except percentages):

	2020	2019	2018
Expected income tax provision at federal statutory tax rate	$ 1,201	$ 1,571	$ 97
State income tax provision, net of federal benefit	7	10	2
Benefit from foreign-derived intangible income (FDII) deduction	(381)	(419)	—
Benefit related to research and development tax credits	(125)	(110)	(136)
Excess tax benefit associated with share-based awards	(83)	(27)	(20)
Benefit from foreign income taxed at other than U.S. rates	(11)	(54)	(834)
Derecognition of deferred tax asset on distributed intellectual property	—	2,472	—
Benefit from establishing new U.S. net deferred tax assets	—	(570)	—
Nondeductible charges (reversals) related to the EC, KFTC and TFTC investigations	—	51	(119)
Toll Charge from U.S. tax reform	—	—	5,236
Valuation allowance on deferred tax assets related to the NXP termination fee	—	—	494
Remeasurement of deferred taxes due to changes in the statutory rate due to U.S. tax reform	—	—	443
Other	(87)	171	193
	$ 521	$ 3,095	$ 5,356
Effective tax rate	9 %	41 %	N/M

N/M - Not meaningful

The 2017 Tax Cuts and Jobs Act (the Tax Legislation) was enacted in fiscal 2018, which, among other things, lowered the corporate income tax rate to 21%, and as a fiscal-year taxpayer, certain provisions of the Tax Legislation became effective for us at the beginning of fiscal 2019, including FDII (foreign-derived intangible income). In response to the Tax Legislation and to better align our profits with our activities, we implemented certain tax restructuring in fiscal 2018 and 2019. As a result, beginning in fiscal 2019, substantially all of our income is in the U.S., of which a significant portion qualifies for preferential treatment as FDII at a 13% effective tax rate. Our annual effective tax rate for fiscal 2018 reflected a blended federal statutory rate of approximately 25%.

In the fourth quarter of fiscal 2020, the United States Treasury Department issued final regulations on deductions for FDII, which are retroactive to fiscal 2019. As a result of these regulations, our fiscal 2020 annual effective tax rate increased by approximately 1%. In the first quarter of fiscal 2021, the United States Treasury Department issued final regulations on the foreign tax credit, which we anticipate will adversely affect our effective tax rate. The impact of these regulations, which are retroactive to fiscal 2019, has not been included in our fiscal 2020 effective tax rate. While we continue to evaluate these new regulations, we currently do not expect the adverse impact to fiscal 2019 and 2020 to be significant.

As a result of the Tax Legislation, in fiscal 2019, several of our foreign subsidiaries made elections to be treated as U.S. branches for federal income tax purposes (commonly referred to as “check-the-box” elections) effective beginning in fiscal 2018 and 2019. Although beginning in fiscal 2019 the income of these entities is included in our consolidated U.S. tax return, we believe that by treating these foreign subsidiaries as U.S. branches for federal income taxes, rather than controlled foreign corporations, we will significantly reduce the risk of being subject to GILTI (global intangible low-taxed income) and BEAT (base-erosion and anti-abuse tax) taxes. As a result of making these check-the-box elections, we recorded a tax benefit of $570 million in the first quarter of fiscal 2019 due to establishing new U.S. net deferred tax assets resulting from the difference between the GAAP basis and the U.S. federal tax carryover basis of the existing assets and liabilities of those foreign subsidiaries, primarily related to customer incentive liabilities that have not been deducted for tax purposes. Additionally, during fiscal 2018, one of our foreign subsidiaries distributed certain intellectual property to a U.S. subsidiary resulting in a difference between the GAAP basis and the U.S. federal tax basis of the distributed intellectual property. Upon adoption of new accounting guidance in the first quarter of fiscal 2019, which changed the accounting for the income tax effects of intra-entity transfers of assets other than inventory, we recorded a deferred tax asset of approximately $2.6 billion primarily related to the distributed intellectual property, with an adjustment to opening retained earnings. During the third quarter of fiscal 2019, the United States Treasury Department issued new temporary regulations that resulted in a change to the deductibility of dividend income received by a U.S. stockholder from a foreign corporation. As a result of this change, pursuant to an agreement with the Internal Revenue Service, we relinquished the federal tax basis step-up of intellectual property that was distributed in fiscal 2018 by one of our foreign subsidiaries to a U.S. subsidiary. Therefore, the related deferred tax asset was derecognized, resulting in a $2.5 billion charge to income tax expense in fiscal 2019.

In fiscal 2019, as a result of recent court rulings in Korea, among other factors, we decided to apply for a partial refund claim for taxes previously withheld from licensees in Korea on payments due under their license agreements to which we have claimed a foreign tax credit in the United States. As a result, $1.6 billion and $1.4 billion was recorded as a noncurrent income taxes receivable (recorded in other assets) at September 27, 2020 and September 29, 2019, respectively, and $1.6 billion and $1.4 billion was recorded a noncurrent liability for uncertain tax benefits of (recorded in other liabilities) at September 27, 2020 and September 29, 2019, respectively.

In fiscal 2018, as a result of the Tax Legislation, we recorded a charge of $5.7 billion to income tax expense, comprised of $5.2 billion related to the estimated one-time repatriation tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (the Toll Charge) and $438 million resulting from the remeasurement of U.S. deferred tax assets and liabilities that existed at the end of fiscal 2017 at a lower enacted corporate income tax rate, which included a $135 million tax benefit recorded in fiscal 2018 related to the remeasurement of a U.S. deferred tax liability that was established as a result of a change in one of our tax positions due to Tax Legislation. After application of certain tax credits, the total cash payment is $2.5 billion. At September 27, 2020, we estimated remaining future payments of $2.0 billion for the Toll Charge, after application of certain tax credits (including excess tax credits generated in fiscal 2019), which is payable in installments over the next six years. At September 27, 2020, $174 million was recorded in other current liabilities, reflecting the next installment due in January 2021.

Income tax expense for fiscal 2018 was also impacted by the charge recorded in fiscal 2018 related to the termination fee paid to NXP, which did not result in a tax benefit after the consideration of realizability of such loss. Fiscal 2018 income tax expense was impacted by the EC fine and settlement with the TFTC, which were not deductible for tax purposes (or taxable in the case of the settlement) and which were attributable to foreign jurisdictions and to the United States.

Certain of our tax incentives in Singapore expired in March 2017. In fiscal 2018, we entered into a new tax incentive agreement in Singapore that results in a reduced tax rate from March 2017 through March 2022, provided that we meet specified employment and investment criteria in Singapore. Our Singapore tax rate will increase in March 2022 as a result of expiration of these incentives and again in March 2027 upon the expiration of tax incentives under a prior agreement. During fiscal 2018, one of our Singapore subsidiaries distributed certain intellectual property to a U.S. subsidiary reducing the benefit of these tax incentives almost entirely going forward. Without these tax incentives, our income tax expense would have been higher in fiscal 2018 by $652 million and impacted earnings per share by $0.45 per share. The impact in fiscal 2019 and 2020 was not significant.

We continue to assert that certain of our foreign earnings are not indefinitely reinvested. At September 27, 2020, we had not recorded a deferred tax liability of approximately $66 million related to foreign withholding taxes on approximately $635 million of undistributed earnings of certain subsidiaries that we continue to consider to be indefinitely reinvested outside the United States. Should we decide to no longer indefinitely reinvest such earnings outside the United States, we would have to adjust the income tax provision in the period we make such determination.

We had deferred tax assets and deferred tax liabilities as follows (in millions):

	September 27, 2020	September 29, 2019
Unused tax credits	$ 1,311	$ 1,137
Accrued liabilities and reserves	812	648
Unused net operating losses	576	619
Unearned revenues	262	376
Unrealized losses on other investments and marketable securities	235	164
Share-based compensation	151	115
Operating lease liabilities	107	—
Other	141	144
Total gross deferred tax assets	3,595	3,203
Valuation allowance	(1,728)	(1,672)
Total net deferred tax assets	1,867	1,531
Intangible assets	(181)	(216)
Property, plant and equipment	(162)	(102)
Operating lease assets	(100)	—
Unrealized gains on other investments and marketable securities	(97)	(99)
Other	(32)	(21)
Total deferred tax liabilities	(572)	(438)
Net deferred tax assets	$ 1,295	$ 1,093
Reported as:		
Non-current deferred tax assets	$ 1,351	$ 1,196
Non-current deferred tax liabilities (1)	(56)	(103)
	$ 1,295	$ 1,093

(1) Non-current deferred tax liabilities were included in other liabilities in the consolidated balance sheets.

At September 27, 2020, we had unused federal net operating loss carryforwards of $167 million expiring from 2021 through 2035, unused state net operating loss carryforwards of $579 million expiring from 2021 through 2040 and unused foreign net operating loss carryforwards of $2.2 billion, of which $2.0 billion expire in 2027. At September 27, 2020, we had unused state tax credits of $1.1 billion, of which substantially all may be carried forward indefinitely, unused federal tax credits of $187 million expiring from 2026 through 2031 and unused tax credits of $42 million in foreign jurisdictions expiring from 2033 through 2040. We do not expect our federal net operating loss carryforwards to expire unused.

At September 27, 2020, we have provided a valuation allowance on certain state tax credits, foreign deferred tax assets, federal capital losses, federal foreign tax credits and state net operating losses of $1.1 billion, $524 million, $29 million, $28 million and $14 million, respectively. The valuation allowance reflects the uncertainties surrounding our ability to generate sufficient future taxable income in certain foreign and state tax jurisdictions to utilize our net operating losses and our ability to generate sufficient capital gains to utilize all capital losses. We believe, more likely than not, that we will have sufficient taxable income after deductions related to share-based awards to utilize our remaining deferred tax assets.

A summary of the changes in the amount of unrecognized tax benefits for fiscal 2020, 2019 and 2018 follows (in millions):

	2020	2019	2018
Beginning balance of unrecognized tax benefits	$ 1,705	$ 217	$ 372
Additions based on prior year tax positions	20	1,238	7
Reductions for prior year tax positions and lapse in statute of limitations	(2)	(3)	(11)
Additions for current year tax positions	192	253	18
Settlements with taxing authorities	(14)	—	(169)
Ending balance of unrecognized tax benefits	$ 1,901	$ 1,705	$ 217

Of the $1.9 billion of unrecognized tax benefits, $1.8 billion has been recorded to other noncurrent liabilities. We believe that it is reasonably possible that certain unrecognized tax benefits recorded at September 27, 2020 may result in a cash payment in fiscal 2021. Unrecognized tax benefits at September 27, 2020 included $127 million for tax positions that, if recognized, would impact the effective tax rate. The unrecognized tax benefits differ from the amount that would affect our effective tax rate primarily because the unrecognized tax benefits were included on a gross basis and did not reflect related receivables or secondary impacts, such as the federal deduction for state taxes, adjustments to deferred tax assets and the valuation allowance that might be required if our tax positions are sustained. The increase in unrecognized tax benefits in fiscal 2020 and fiscal 2019 was primarily due to our decision in fiscal 2019 to request for a refund of Korean withholding tax (which had an insignificant impact to our income tax provision). If successful, the refund will result in a corresponding reduction in U.S. foreign tax credits. We believe that it is likely that the total amount of unrecognized tax benefits at September 27, 2020 will increase in fiscal 2021 as licensees in Korea continue to withhold taxes on future payments due under their licensing agreements at a rate higher than we believe is owed; such increase is not expected to have a significant impact on our income tax provision.

We file income tax returns in the United States federal jurisdiction and various state and foreign jurisdictions. We are currently a participant in the IRS Compliance Assurance Process, whereby we and the IRS endeavor to agree on the treatment of all tax issues prior to the tax return being filed. We are no longer subject to U.S. federal income tax examinations for years prior to fiscal 2015. We are subject to examination by the California Franchise Tax Board for fiscal years after 2014. We are also subject to examination in other taxing jurisdictions in the United States and numerous foreign jurisdictions. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds, many of which are open for periods after fiscal 2000. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. At September 27, 2020, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Cash amounts paid for income taxes, net of refunds received, were $830 million, $1.1 billion and $877 million for fiscal 2020, 2019 and 2018, respectively.

Note 4. Capital Stock

Stock Repurchase Program. On July 26, 2018, we announced a stock repurchase program authorizing us to repurchase up to $30 billion of our common stock. The stock repurchase program has no expiration date. In the first quarter of fiscal 2021, we resumed stock repurchases under the stock repurchase program, which we had suspended in the third quarter of fiscal 2020 in light of COVID-19 to maintain our financial liquidity position and flexibility.

In September 2018, we entered into three accelerated share repurchase agreements (ASR Agreements) with three financial institutions under which we paid an aggregate of $16.0 billion upfront to the financial institutions and received from them an initial delivery of 178 million shares of our common stock, which were retired and recorded as a $12.8 billion reduction to stockholders' equity. The remaining $3.2 billion was recorded as a reduction to stockholders' equity as an unsettled forward contract indexed to our own stock. During September 2019, the ASR Agreements were completed, and an additional 69 million shares were delivered to us, which were retired, and the forward contract was settled with no adjustment to stockholders' equity. In total, we purchased 247 million shares based on the volume-weighted average stock price of our common stock during the terms of the transactions, less a discount.

During fiscal 2020, 2019 and 2018, we repurchased and retired an additional 31 million, 27 million and 24 million shares of common stock, respectively, for $2.4 billion, $1.8 billion and $1.4 billion, respectively, before commissions. To reflect share repurchases in the consolidated balance sheet, we (i) reduce common stock for the par value of the shares, (ii) reduce paid-in capital for the amount in excess of par to zero during the quarter in which the shares are repurchased and (iii) record the residual amount, if any, to retained earnings. At September 27, 2020, $4.6 billion remained authorized for repurchase under our stock repurchase program.

Shares Outstanding. Shares of common stock outstanding at September 27, 2020 were as follows (in millions):

	2020
Balance at beginning of period	1,145
Issued	17
Repurchased	(31)
Balance at end of period	1,131

Dividends. On October 14, 2020, we announced a cash dividend of $0.65 per share on our common stock, payable on December 17, 2020 to stockholders of record as of the close of business on December 3, 2020.

Note 5. Employee Benefit Plans

Employee Savings and Retirement Plan. We have a 401(k) plan that allows eligible employees to contribute up to 85% of their eligible compensation, subject to annual limits. We match a portion of the employee contributions and may, at our discretion, make additional contributions based upon earnings. Our contribution expense was $69 million, $64 million and $78 million in fiscal 2020, 2019 and 2018, respectively.

Equity Compensation Plans. On March 10, 2020, our stockholders approved the amended and restated Qualcomm Incorporated 2016 Long-Term Incentive Plan (the 2016 Plan), including an increase in the share reserve by 75 million shares. The 2016 Plan provides for the grant of incentive and nonstatutory stock options, stock appreciation rights, restricted stock, unrestricted stock, restricted stock units, performance units, performance shares, deferred compensation awards and other stock-based awards. The Board of Directors may amend or terminate the 2016 Plan at any time. Certain amendments, including an increase in the share reserve, require stockholder approval. At September 27, 2020, approximately 92 million shares were available for future grant under the 2016 Plan.

RSUs are share awards that entitle the holder to receive shares of our common stock upon vesting. The RSUs generally include dividend-equivalent rights and vest over three years from the date of grant. A summary of RSU transactions that contain only service requirements to vest for all equity compensation plans follows:

	Number of Shares	Weighted-Average Grant Date Fair Value	Aggregate Intrinsic Value
	(In millions)		(In billions)
RSUs outstanding at September 29, 2019	27	$ 62.57	
RSUs granted	20	82.57	
RSUs canceled/forfeited	(1)	72.04	
RSUs vested	(14)	62.58	
RSUs outstanding at September 27, 2020	32	$ 74.99	$ 3.6

The weighted-average estimated fair values of employee RSUs that contain only service requirements to vest granted during fiscal 2019 and 2018 were $63.10 and $62.61 per share, respectively. Upon vesting, we issue new shares of common stock. For the majority of RSUs, shares are issued on the vesting dates net of the amount of shares needed to satisfy statutory tax withholding requirements to be paid by us on behalf of the employees. As a result, the actual number of shares issued will be fewer than the number of RSUs outstanding. The annual pre-vest forfeiture rate for RSUs was estimated to be approximately 7%, 7% and 6% in fiscal 2020, 2019 and 2018, respectively.

At September 27, 2020, total unrecognized compensation expense related to such non-vested RSUs granted prior to that date was $1.5 billion, which is expected to be recognized over a weighted-average period of 1.8 years. The total vest-date fair value of such RSUs that vested during fiscal 2020, 2019 and 2018 was $1.3 billion, $977 million and $940 million, respectively. The total shares withheld to satisfy statutory tax withholding requirements related to all share-based awards were approximately 4 million in fiscal 2020, 2019 and 2018, and were based on the value of the awards on their vesting dates as determined by our closing stock price.

The total tax benefits realized, including the excess tax benefits, related to share-based awards during fiscal 2020, 2019 and 2018 were $273 million, $237 million and $254 million, respectively.

Employee Stock Purchase Plan. We have an employee stock purchase plan for eligible employees to purchase shares of common stock at 85% of the lower of the fair market value on the first or the last day of each offering period, which is generally six months. Employees may authorize us to withhold up to 15% of their compensation during any offering period, subject to certain limitations. The employee stock purchase plan includes a non-423(b) plan. On March 23, 2018, our stockholders approved an amendment to the Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan to increase the share reserve by 30 million shares. The shares authorized under the plan were approximately 102 million at September 27, 2020. The shares reserved for future issuance were approximately 28 million at September 27, 2020. During fiscal 2020, 2019 and 2018, approximately 5 million, 6 million and 6 million shares, respectively, were issued under the plan at an average price of $66.53, $42.13

and $49.41 per share, respectively. At September 27, 2020, total unrecognized compensation expense related to non-vested purchase rights granted prior to that date was $35 million. We recorded cash received from the exercise of purchase rights of $306 million, $257 million and $286 million during fiscal 2020, 2019 and 2018, respectively.

Note 6. Debt

Long-term Debt. In May 2020, we issued unsecured fixed-rate notes, consisting of $1.2 billion fixed-rate 2.15% notes and $800 million fixed-rate 3.25% notes (May 2020 Notes) that mature on May 20, 2030 and May 20, 2050, respectively. The proceeds from the May 2020 Notes, net of underwriting discounts and offering expenses, were used to repay the $250 million floating-rate and $1.75 billion fixed-rate notes that matured on May 20, 2020, which were classified as short-term debt at September 29, 2019.

In August 2020, we completed an exchange of $2.0 billion of our outstanding fixed-rate notes maturing between 2022 and 2025 (Old Notes) for $1.0 billion fixed-rate 1.30% notes due May 20, 2028 and $1.2 billion fixed-rate 1.65% notes due May 20, 2032 (August 2020 Notes). In connection with this exchange, we also repurchased $202 million of the Old Notes from holders not eligible to participate in the exchange, which resulted in a $17 million loss on extinguishment recorded in interest expense.

The following table provides a summary of our long-term debt and current portion of long-term debt:

	September 27, 2020			September 29, 2019		
	Maturities	Amount (in millions)	Effective Rate	Maturities	Amount (in millions)	Effective Rate
May 2015 Notes	2022 - 2045	$ 5,405	2.62% - 4.73%	2020 - 2045	$ 8,500	2.64% - 4.73%
May 2017 Notes	2023 - 2047	5,860	1.06% - 4.46%	2023 - 2047	7,000	2.70% - 4.47%
May 2020 Notes	2030 - 2050	2,000	2.31% - 3.30%		—	
August 2020 Notes	2028 - 2032	2,207	1.96% - 2.65%		—	
Total principal		15,472			15,500	
Unamortized discount, including debt issuance costs		(260)			(75)	
Hedge accounting fair value adjustments		14			9	
Total long-term debt		$ 15,226			$ 15,434	
Reported as:						
Short-term debt		$ —			$ 1,997	
Long-term debt		15,226			13,437	
Total		$ 15,226			$ 15,434	

At September 27, 2020, future principal payments were $1.5 billion in fiscal 2022, $1.5 billion in fiscal 2023, $914 million in fiscal 2024, $1.4 billion in fiscal 2025 and $10.2 billion after fiscal 2025; no principal payments are due in fiscal 2021. At September 27, 2020 and September 29, 2019, the aggregate fair value of the notes, based on Level 2 inputs, was approximately $17.5 billion and $16.5 billion, respectively.

We may redeem the outstanding fixed-rate notes at any time in whole, or from time to time in part, at specified make-whole premiums as defined in the applicable form of note. We may not redeem the outstanding floating-rate notes prior to maturity. The obligations under the notes rank equally in right of payment with all of our other senior unsecured indebtedness and will effectively rank junior to all liabilities of our subsidiaries. At September 27, 2020, with the exception of $500 million of outstanding unsecured floating-rate notes due January 30, 2023, all of our outstanding long-term debt is comprised of unsecured fixed-rate notes.

The effective interest rates for the notes include the interest on the notes, amortization of the discount, which includes debt issuance costs, and if applicable, adjustments related to hedging. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes. Cash interest paid related to our commercial paper program and long-term debt, net of cash received from the related interest rate swaps, was $507 million, $563 million and $662 million during fiscal 2020, 2019 and 2018, respectively.

Commercial Paper Program. In fiscal 2020, we reduced the total amount available for issuance under our unsecured commercial paper program from $5.0 billion to $4.5 billion. Net proceeds from this program are used for general corporate purposes. Maturities of commercial paper can range from 1 to up to 397 days. At September 27, 2020 and September 29, 2019, we had $500 million and $499 million, respectively, of outstanding commercial paper recorded as short-term debt with a weighted-average interest rate of 0.21% and 2.17%, respectively, which included fees paid to the commercial paper dealers, and weighted-average remaining days to maturity of 37 days and 41 days, respectively. The carrying value of the outstanding commercial paper approximated its estimated fair value at September 27, 2020 and September 29, 2019.

Revolving Credit Facility. We have an Amended and Restated Revolving Credit Facility (Revolving Credit Facility) that provides for unsecured revolving facility loans, swing line loans and letters of credit in an aggregate amount of up to $4.5 billion, which expires on November 8, 2021. At September 27, 2020 and September 29, 2019, no amounts were outstanding under the Revolving Credit Facility.

Debt Covenants. The Revolving Credit Facility requires that we comply with certain covenants, including one financial covenant to maintain a ratio of consolidated earnings before interest, taxes, depreciation and amortization to consolidated interest expense, as defined in each of the respective agreements, of not less than three to one at the end of each fiscal quarter. We are not subject to any financial covenants under the notes nor any covenants that would prohibit us from incurring additional indebtedness ranking equal to the notes, paying dividends, issuing securities or repurchasing securities issued by us or our subsidiaries. At September 27, 2020 and September 29, 2019, we were in compliance with the applicable covenants under the Revolving Credit Facility.

Note 7. Commitments and Contingencies

Legal and Regulatory Proceedings.

Consolidated Securities Class Action Lawsuit: On January 23, 2017 and January 26, 2017, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and certain of our current and former officers and directors. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 thereunder, by making false and misleading statements and omissions of material fact in connection with certain allegations that we are or were engaged in anticompetitive conduct. The complaints sought unspecified damages, interest, fees and costs. On May 4, 2017, the court consolidated the two actions and appointed lead plaintiffs. On July 3, 2017, the lead plaintiffs filed a consolidated amended complaint asserting the same basic theories of liability and requesting the same basic relief. On September 1, 2017, we filed a motion to dismiss the consolidated amended complaint. On March 18, 2019, the court denied our motion to dismiss. On January 15, 2020, we filed a motion for judgment on the pleadings. The court has not yet ruled on our motion. We believe the plaintiffs' claims are without merit.

In re Qualcomm/Broadcom Merger Securities Litigation: On June 8, 2018 and June 26, 2018, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and two of our current officers. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 thereunder, by failing to disclose that we had submitted a notice to the Committee on Foreign Investment in the United States (CFIUS) in January 2018. The complaints sought unspecified damages, interest, fees and costs. On January 22, 2019, the court appointed the lead plaintiff in the action. On March 18, 2019, the plaintiffs filed a consolidated complaint asserting the same basic theories of liability and requesting the same basic relief. On May 10, 2019, we filed a motion to dismiss the consolidated complaint, and on March 10, 2020, the court granted our motion. On May 11, 2020, the plaintiffs filed a second amended complaint, and on June 25, 2020, we filed a motion to dismiss that complaint. On October 8, 2020, the court heard oral arguments on our motion to dismiss, following which it granted our motion and dismissed the case with prejudice. We believe the plaintiffs' claims are without merit.

Consumer Class Action Lawsuit: Since January 18, 2017, a number of consumer class action complaints have been filed against us in the United States District Courts for the Southern and Northern Districts of California, each on behalf of a putative class of purchasers of cellular phones and other cellular devices. In April 2017, the Judicial Panel on Multidistrict Litigation transferred the cases that had been filed in the Southern District of California to the Northern District of California. On May 15, 2017, the court entered an order appointing the plaintiffs' co-lead counsel. On July 11, 2017, the plaintiffs filed a consolidated amended complaint alleging that we violated California and federal antitrust and unfair competition laws by, among other things, refusing to license standard-essential patents to our competitors, conditioning the supply of certain of our baseband chipsets on the purchaser first agreeing to license our entire patent portfolio, entering into exclusive deals with companies, including Apple Inc., and charging unreasonably high royalties that do not comply with our commitments to standard setting organizations. The complaint seeks unspecified damages and disgorgement and/or restitution, as well as an order that we be enjoined from further unlawful conduct. On August 11, 2017, we filed a motion to dismiss the consolidated amended complaint. On November 10, 2017, the court denied our motion, except to the extent that certain claims seek damages under the Sherman Antitrust Act. On July 5, 2018, the plaintiffs filed a motion for class certification, and the court granted that motion on September 27, 2018. On January 23, 2019, the United States Court of Appeals for the Ninth Circuit (Ninth Circuit) granted us permission to appeal the court's class certification order. On January 24, 2019, the court stayed the case pending our appeal. On December 2, 2019, a hearing on our appeal of the class certification order was held before the Ninth Circuit. The Ninth Circuit has not yet ruled on our appeal. We believe the plaintiffs' claims are without merit.

Since November 2017, several other consumer class action complaints have been filed against us in Canada (in the Ontario Superior Court of Justice, the Supreme Court of British Columbia and the Quebec Superior Court) and Israel (in the Haifa District Court), each on behalf of a putative class of purchasers of cellular phones and other cellular devices, alleging violations of certain of those countries' competition and consumer protection laws. The claims in these complaints are similar to those in the U.S. consumer class action complaints. The complaints seek unspecified damages. We believe the plaintiffs' claims are without merit.

ParkerVision, Inc. v. QUALCOMM Incorporated: On May 1, 2014, ParkerVision filed a complaint against us in the United States District Court for the Middle District of Florida alleging that certain of our products infringed seven ParkerVision patents. On August 21, 2014, ParkerVision amended the complaint, then captioned ParkerVision, Inc. v. QUALCOMM Incorporated, Qualcomm Atheros, Inc., HTC Corporation, HTC America, Inc., Samsung Electronics Co., LTD., Samsung Electronics America, Inc. and Samsung Telecommunications America, LLC, broadening the allegations. ParkerVision alleged that we infringed 11 ParkerVision patents and sought damages and injunctive and other relief. ParkerVision has subsequently reduced the number of patents asserted to four, granted covenants not to sue on the other patents, and dismissed the Samsung and HTC entities from the case. The asserted patents are now expired and injunctive relief is no longer available. ParkerVision continues to seek damages related to the sale of many of our radio frequency (RF) products sold between 2008 and 2018. Trial is currently scheduled to begin on May 3, 2021, but may be delayed due to the

COVID-19 pandemic. We have previously prevailed on infringement claims asserted by ParkerVision in related lawsuits and have successfully invalidated a number of their patent claims in patent office proceedings. We believe that ParkerVision's claims are without merit.

Korea Fair Trade Commission (KFTC) Investigation (2015): On March 17, 2015, the KFTC notified us that it was conducting an investigation of us relating to the Korean Monopoly Regulation and Fair Trade Act (MRFTA). On December 27, 2016, the KFTC announced that it had reached a decision in the investigation, finding that we violated provisions of the MRFTA. On January 22, 2017, we received the KFTC's formal written decision, which found that the following conducts violate the MRFTA: (i) refusing to license, or imposing restrictions on licenses for, cellular communications standard-essential patents with competing modem chipset makers; (ii) conditioning the supply of modem chipsets to handset suppliers on their execution and performance of license agreements with us; and (iii) coercing agreement terms including portfolio license terms, royalty terms and free cross-grant terms in executing patent license agreements with handset makers. The KFTC's decision orders us to: (a) upon request by modem chipset companies, engage in good-faith negotiations for patent license agreements, without offering unjustifiable conditions, and if necessary submit to a determination of terms by an independent third party; (b) not demand that handset companies execute and perform under patent license agreements as a precondition for purchasing modem chipsets; (c) not demand unjustifiable conditions in our license agreements with handset companies, and upon request renegotiate existing patent license agreements; and (d) notify modem chipset companies and handset companies of the decision and order imposed on us and report to the KFTC new or amended agreements. According to the KFTC's decision, the foregoing will apply to transactions between us and the following enterprises: (1) handset manufacturers headquartered in Korea and their affiliate companies; (2) enterprises that sell handsets in or to Korea and their affiliate companies; (3) enterprises that supply handsets to companies referred to in (2) above and the affiliate companies of such enterprises; (4) modem chipset manufacturers headquartered in Korea and their affiliate companies; and (5) enterprises that supply modem chipsets to companies referred to in (1), (2) or (3) above and the affiliate companies of such enterprises. The KFTC's decision also imposed a fine of 1.03 trillion Korean won (approximately $927 million), which we paid on March 30, 2017.

On February 21, 2017, we filed an action in the Seoul High Court to cancel the KFTC's decision. The Seoul High Court held hearings concluding on August 14, 2019 and, on December 4, 2019, announced its judgment affirming certain portions of the KFTC's decision and finding other portions of the KFTC's decision unlawful. The Seoul High Court cancelled the KFTC's remedial orders described in (c) above, and solely insofar as they correspond thereto, the Seoul High Court cancelled the KFTC's remedial orders described in (d) above. The Seoul High Court dismissed the remainder of our action to cancel the KFTC's decision. On December 19, 2019, we filed a notice of appeal to the Korea Supreme Court challenging those portions of the Seoul High Court decision that are not in our favor. The KFTC filed a notice of appeal to the Korea Supreme Court challenging the portions of the Seoul High Court decision that are not in its favor. Both we and the KFTC have filed briefs on the merits. The Korea Supreme Court has not yet ruled on our appeal or that of the KFTC. We believe that our business practices do not violate the MRFTA.

Korea Fair Trade Commission (KFTC) Investigation (2020): On June 8, 2020, the KFTC informed us that it was conducting an investigation of us relating to the MRFTA. The KFTC has not provided a formal notice on the scope of their investigation, but we believe it concerns our business practices in connection with our sale of radio frequency front end (RFFE) components. If a violation is found, a broad range of remedies is potentially available to the KFTC, including imposing a fine (of up to 3% of our sales in the relevant markets during the alleged period of violation) and/or injunctive relief prohibiting or restricting certain business practices. It is difficult to predict the outcome of this matter or what remedies, if any, may be imposed by the KFTC. We believe that our business practices do not violate the MRFTA.

Icera Complaint to the European Commission (EC): On June 7, 2010, the EC notified and provided us with a redacted copy of a complaint filed with the EC by Icera, Inc. (subsequently acquired by Nvidia Corporation) alleging that we were engaged in anticompetitive activity. On July 16, 2015, the EC announced that it had initiated formal proceedings in this matter. On July 18, 2019, the EC issued a decision confirming their preliminary view that between 2009 and 2011, we engaged in predatory pricing by selling certain baseband chipsets to two customers at prices below cost with the intention of hindering competition and imposed a fine of approximately 242 million euros. On October 1, 2019, we filed an appeal of the EC's decision with the General Court of the European Union. The court has not yet ruled on our appeal. We believe that our business practices do not violate the European Union (EU) competition rules.

In the third quarter of fiscal 2019, we recorded a charge of $275 million to other expenses related to this EC fine. We provided a financial guarantee in the first quarter of fiscal 2020 to satisfy the obligation in lieu of cash payment while we appeal the EC's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding.

In the fourth quarter of fiscal 2019, we designated the liability as a hedge of our net investment in certain foreign subsidiaries, with gains and losses recorded in accumulated other comprehensive income as a component of the foreign currency translation adjustment. At September 27, 2020, the liability, including related foreign currency gains and accrued interest (which, to the extent they were not related to the net investment hedge, were recorded in investment and other income, net), was $286 million and included in other current liabilities.

European Commission (EC) Investigation: On October 15, 2014, the EC notified us that it was conducting an investigation of us relating to Articles 101 and/or 102 of the Treaty on the Functioning of the European Union (TFEU). On July 16, 2015, the EC announced that it had initiated formal proceedings in this matter. On January 24, 2018, the EC issued a decision finding that pursuant to an agreement with Apple Inc. we paid significant amounts to Apple on the condition that it exclusively use our baseband chipsets in its smartphones and tablets, reducing Apple's incentives to source baseband chipsets from our competitors and harming competition and innovation for certain baseband chipsets, and imposed a fine of 997 million euros. On April 6, 2018, we filed an appeal of the EC's decision with the General Court of the European Union. The court has not yet ruled on our appeal. We believe that our business practices do not violate the EU competition rules.

In the first quarter of fiscal 2018, we recorded a charge of $1.2 billion to other expenses related to this EC fine. We provided financial guarantees in the third quarter of fiscal 2018 to satisfy the obligation in lieu of cash payment while we appeal the EC's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding. In the first quarter of fiscal 2019, we designated the liability as a hedge of our net investment in certain foreign subsidiaries, with gains and losses recorded in accumulated other comprehensive income as a component of the foreign currency translation adjustment. At September 27, 2020, the liability, including related foreign currency gains and accrued interest (which, to the extent they were not related to the net investment hedge, were recorded in investment and other income, net), was $1.2 billion and included in other current liabilities.

European Commission (EC) Investigation regarding Radio Frequency Front End (RFFE): On December 3, 2019, we received a Request for Information from the EC notifying us that it is investigating whether we engaged in anti-competitive behavior in the European Union (EU)/European Economic Area (EEA) by leveraging our market position in 5G baseband processors in the RFFE space. We have responded to the Request for Information. If a violation is found, a broad range of remedies is potentially available to the EC, including imposing a fine (of up to 10% of our annual revenues) and/or injunctive relief prohibiting or restricting certain business practices. It is difficult to predict the outcome of this matter or what remedies, if any, may be imposed by the EC. We believe that our business practices do not violate the EU competition rules.

United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated: On September 17, 2014, the FTC notified us that it was conducting an investigation of us relating to Section 5 of the Federal Trade Commission Act (FTCA). On January 17, 2017, the FTC filed a complaint against us in the United States District Court for the Northern District of California alleging that we were engaged in anticompetitive conduct and unfair methods of competition in violation of Section 5 of the FTCA by conditioning the supply of cellular modem chipsets on the purchaser first agreeing to a license to our cellular standard-essential patents, paying incentives to purchasers of cellular modem chipsets to induce them to accept certain license terms, refusing to license our cellular standard-essential patents to our competitors and entering into alleged exclusive dealing arrangements with Apple Inc. The complaint sought a permanent injunction against our alleged violations of the FTCA and other unspecified ancillary equitable relief. On August 30, 2018, the FTC moved for partial summary judgment that our commitments to license our cellular standard-essential patents to the Alliance for Telecommunications Industry Solutions (ATIS) and the Telecommunications Industry Association (TIA) require us to make licenses available to rival sellers of cellular modem chipsets. On November 6, 2018, the court granted the FTC's partial summary judgment motion. Trial was held January 4-29, 2019.

On May 21, 2019, the court issued an Order setting forth its Findings of Fact and Conclusions of Law. The court concluded that we had monopoly power in the CDMA and premium-tier Long Term Evolution (LTE) cellular modem chip markets, and that we had used that power in these two markets to engage in anticompetitive acts, including (1) using threats of lack of access to cellular modem chip supply to coerce OEMs to accept license terms that include unreasonably high royalty rates; (2) refusing to license our cellular standard-essential patents to competitors selling cellular modem chips; and (3) entering into exclusive dealing arrangements with OEMs that foreclosed our rivals. The court further found that the royalties we charge OEMs are unreasonably high and reflect the use of our monopoly power over CDMA and premium-tier LTE cellular modem chips rather than just the value of our patents. The court concluded that our unreasonably high royalties constitute an anticompetitive surcharge on cellular modem chips sold by our competitors, which increases the effective price of our competitors' cellular modem chips, reduces their margins and results in exclusivity. The court also found that our practice of not licensing competitors' cellular modem chips violated our commitments to certain standard-development organizations and a duty under the antitrust laws to license competing cellular modem chip makers and helped us maintain our royalties at unreasonably high levels. Finally, the court found that incentive funds entered into with certain OEMs further harmed competing cellular modem chip makers' ability to undermine our monopoly position, prevented rivals from entering the market and restricted the sales of those competitors that do enter. The court concluded that the combined effect of our conduct, together with our monopoly power, harmed the competitive process.

The court imposed the following injunctive relief: (1) we must not condition the supply of cellular modem chips on a customer's patent license status, and we must negotiate or renegotiate license terms with customers in good faith under conditions free from the threat of lack of access to or discriminatory provision of cellular modem chip supply or associated technical support or access to software; (2) we must make exhaustive cellular standard-essential patent licenses available to cellular modem chip suppliers on fair, reasonable and non-discriminatory (FRAND) terms and submit, as necessary, to arbitral or judicial dispute resolution to determine such terms; (3) we may not enter into express or de facto exclusive dealing agreements for the supply of cellular modem chips; and (4) we may not interfere with the ability of any customer to communicate with a government agency about a potential law enforcement or regulatory matter. The court also ordered us to submit to compliance and monitoring procedures for a period of seven years and to report to the FTC on an annual basis regarding our compliance with the above remedies.

We disagree with the court's conclusions, interpretation of the facts and application of the law. On May 31, 2019, we filed with the court a Notice of Appeal to the United States Court of Appeals for the Ninth Circuit (Ninth Circuit). On July 8, 2019, we filed a Motion for Partial Stay of Injunction Pending Appeal and a Consent Motion to Expedite Appeal in the Ninth

Circuit. On August 23, 2019, the Ninth Circuit granted our Motion for Partial Stay. Thus, pending the resolution of the appeal in the Ninth Circuit or until further order of the Ninth Circuit, the portions of the district court's injunction requiring that we must (i) make exhaustive cellular standard-essential patent licenses available to cellular modem chip suppliers and (ii) not condition the supply of cellular modem chips on a customer's patent license status and must negotiate or renegotiate license terms with customers are stayed. On July 10, 2019, the Ninth Circuit granted our Motion to Expedite Appeal. On February 13, 2020, the Ninth Circuit heard oral argument.

On August 11, 2020, the Ninth Circuit issued its opinion, which reversed the district court's judgment, vacated its injunction and vacated its partial grant of summary judgment. The Ninth Circuit stated that the district court erred in holding that we are under an antitrust duty to license rival chip manufacturers and noted that our practice of licensing our standard-essential patents exclusively at the OEM level does not violate the antitrust laws. The Ninth Circuit also held that the district court's "anticompetitive surcharge" theory failed to state a cogent theory of anticompetitive harm and that our patent-licensing royalties and "no license, no chips" policy do not impose an anticompetitive surcharge on rivals' modem chip sales and do not undermine competition in either the CDMA or premium LTE chip markets. While agreeing with the district court that our 2011 and 2013 agreements with Apple were structured like exclusive dealing contracts, the Ninth Circuit nonetheless held that neither agreement had the actual or practical effect of substantially foreclosing competition in the CDMA modem chip market, and because Apple terminated these agreements years ago, the district court had improperly issued an injunction. The Ninth Circuit noted that neither the Sherman Act nor any other law prohibits companies like us from (1) licensing their standard-essential patents independently from their chip sales and collecting royalties, and/or (2) limiting their chip customer base to licensed OEMs. On September 25, 2020, the FTC filed a Petition for Rehearing *En Banc*. On October 28, 2020, the Ninth Circuit denied the FTC's petition.

Contingent losses and other considerations: We will continue to vigorously defend ourselves in the foregoing matters. However, litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Other than with respect to the EC fines, we have not recorded any accrual at September 27, 2020 for contingent losses associated with these matters based on our belief that losses, while reasonably possible, are not probable. Further, any possible amount or range of loss cannot be reasonably estimated at this time. The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows. We are engaged in numerous other legal actions not described above arising in the ordinary course of our business (for example, proceedings relating to employment matters or the initiation or defense of proceedings relating to intellectual property rights) and, while there can be no assurance, believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Indemnifications. We generally do not indemnify our customers, licensees and suppliers for losses sustained from infringement of third-party intellectual property rights. However, we are contingently liable under certain agreements to defend and/or indemnify certain customers, licensees and suppliers against certain types of liability and/or damages arising from the infringement of third-party intellectual property rights. Our obligations under these agreements may be limited in terms of time and/or amount, and in some instances, we may have recourse against third parties for certain payments made by us.

Claims and reimbursements under indemnification arrangements have not been material to our consolidated financial statements. We have not recorded accruals for certain claims under indemnification arrangements based on our belief that additional liabilities, while possible, are not probable. Further, any possible range of loss cannot be reasonably estimated at this time.

Purchase Obligations. We have agreements with suppliers and other parties to purchase inventory, other goods and services and long-lived assets. Integrated circuit product inventory obligations represent purchase commitments for raw materials, semiconductor die, finished goods and manufacturing services, such as wafer bump, probe, assembly and final test. Under our manufacturing relationships with our foundry suppliers and assembly and test service providers, cancellation of outstanding purchase commitments is generally allowed but requires payment of costs incurred through the date of cancellation, and in some cases, incremental fees related to capacity underutilization.

Obligations under our purchase agreements, which primarily relate to integrated circuit product inventory obligations, at September 27, 2020 were as follows (in millions):

	September 27, 2020
2021	$ 5,468
2022	350
2023	189
2024	45
2025	8
Thereafter	—
Total	$ 6,060

Operating Leases. We lease certain of our land, facilities and equipment under operating leases, with terms ranging from less than one year to 20 years, some of which include options to extend for up to 20 years. At September 27, 2020, other assets included $460 million of operating lease assets, with corresponding lease liabilities of $134 million recorded in other current liabilities and $371 million recorded in other liabilities.

Operating lease expense for fiscal 2020, 2019 and 2018 was $181 million, $146 million and $160 million, respectively. Cash paid under our operating leases was $153 million for fiscal 2020. As of September 27, 2020, the weighted-average remaining lease term and weighted-average discount rate for operating leases were 6 years and 4%, respectively.

At September 27, 2020, future lease payments under our operating leases were as follows (in millions):

	September 27, 2020
2021	$ 141
2022	121
2023	75
2024	53
2025	38
Thereafter	150
Total future lease payments	578
Imputed interest	(73)
Total lease liability balance	$ 505

At September 29, 2019, future minimum lease payments under our noncancelable operating leases under ASC 840 were as follows (in millions):

	September 29, 2019
2020	$ 138
2021	97
2022	66
2023	31
2024	18
Thereafter	35
Total	$ 385

Other Commitments. At September 27, 2020, we have committed to fund certain strategic investments up to $185 million, of which $103 million is expected to be funded in fiscal 2021. The substantial majority of the remaining commitments do not have fixed funding dates and are subject to certain conditions. Commitments represent the maximum amounts to be funded under these arrangements; actual funding may be in lesser amounts or not at all.

Note 8. Segment Information

We are organized on the basis of products and services and have three reportable segments. Our operating segments reflect the way our businesses and management/reporting structure are organized internally and the way our Chief Operating Decision Maker (CODM), who is our CEO, reviews financial information, makes operating decisions and assesses business performance. We also consider, among other items, the way budgets and forecasts are prepared and reviewed and the basis on which executive compensation is determined, as well as the similarity of business activities within our operating segments, such as the nature of products, the level of shared products, technology and other resources, production processes and customer base. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on 3G/4G/5G and other technologies for use in mobile devices, wireless networks, devices used in the internet of things (IoT), broadband gateway equipment, consumer electronic devices and automotive systems for telematics and infotainment. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments and includes revenues and related costs associated with development contracts with an investee. We also have nonreportable segments, including QGOV (Qualcomm Government Technologies), our cloud AI inference processing initiative and other technology and service initiatives.

Our CODM allocates resources to and evaluates the performance of our segments based on revenues and earnings (loss) before income taxes (EBT). Segment EBT includes the allocation of certain corporate expenses to the segments, including depreciation and amortization expense related to unallocated corporate assets. Certain income and charges are not allocated to segments in our management reports because they are not considered in evaluating the segments' operating performance. Unallocated income and charges include certain interest expense, certain net investment income, certain share-based compensation, gains and losses on our deferred compensation plan liabilities and related assets and certain research and development expenses, selling, general and administrative expenses and other expenses or income that were deemed to be not directly related to the businesses of the segments. Additionally, unallocated charges include recognition of the step-up of inventories and property, plant and equipment to fair value, amortization of certain intangible assets and certain other acquisition-related charges, third-party acquisition and integration services costs and certain other items, which may include major restructuring and restructuring-related costs, goodwill and long-lived asset impairment charges and awards, settlements and/or damages arising from legal or regulatory matters.

In fiscal 2018, all of the costs ($474 million) related to pre-commercial research and development of 5G technologies were included in unallocated corporate research and development expenses, whereas similar costs related to the research and development of other technologies, including 3G and 4G technologies, were recorded in the QCT and QTL segments. Beginning in fiscal 2019, all research and development costs associated with 5G technologies were included in segment results. Additionally, beginning in fiscal 2019, certain research and development costs associated with early research and development that were historically included in our QCT segment were allocated to our QTL segment. The net effect of these changes negatively impacted QTL's EBT by $489 million in fiscal 2019 and positively impacted QCT's EBT by $160 million in fiscal 2019.

The table below presents revenues, EBT and total assets for reportable segments (in millions):

	2020	2019	2018
Revenues			
QCT	$ 16,493	$ 14,639	$ 17,282
QTL	5,028	4,591	5,042
QSI	36	152	100
Reconciling items	1,974	4,891	187
Total	$ 23,531	$ 24,273	$ 22,611
EBT			
QCT	$ 2,763	$ 2,143	$ 2,966
QTL	3,442	2,954	3,404
QSI	(11)	344	24
Reconciling items	(475)	2,040	(6,002)
Total	$ 5,719	$ 7,481	$ 392
Assets			
QCT	$ 3,990	$ 2,307	$ 3,041
QTL	1,601	1,541	1,472
QSI	1,371	1,708	1,279
Reconciling items	28,632	27,401	26,926
Total	$ 35,594	$ 32,957	$ 32,718

Segment assets are comprised of accounts receivable and inventories for QCT and QTL. QSI segment assets include certain non-marketable equity instruments, receivables and other investments. QSI assets at September 27, 2020, September 29, 2019 and September 30, 2018 included $110 million, $230 million and $283 million, respectively, related to investments in equity method investees. Total segment assets differ from total assets on a consolidated basis as a result of unallocated corporate assets primarily comprised of certain cash, cash equivalents, marketable and non-marketable securities, accounts receivable from Huawei related to the remaining amounts due under the settlement agreement (Note 2), property, plant and equipment, deferred tax assets, goodwill, intangible assets, operating lease assets, noncurrent income taxes receivables, deferred compensation plan assets and assets of nonreportable segments. The net book value of long-lived tangible assets located outside of the United States was $2.3 billion, $1.4 billion and $1.4 billion at September 27, 2020, September 29, 2019 and September 30, 2018, respectively. The net book value of long-lived tangible assets located in the United States was $1.9 billion, $1.7 billion and $1.6 billion at September 27, 2020, September 29, 2019 and September 30, 2018, respectively.

We report revenues from external customers by country based on the location to which our products or services are delivered, which for QCT is generally the country in which our customers manufacture their products, and for licensing revenues, the invoiced addresses of our licensees. As a result, the revenues by country presented herein are not necessarily indicative of either the country in which the devices containing our products and/or intellectual property are ultimately sold to consumers or the country in which the companies that sell the devices are headquartered. For example, China revenues could include revenues related to shipments of integrated circuits for a company that is headquartered in South Korea but that manufactures devices in China, which devices are then sold to consumers in Europe and/or the United States. Revenues by country were as follows (in millions):

	2020	2019	2018
China (including Hong Kong)	$ 14,001	$ 11,610	$ 15,149
South Korea	2,964	2,400	3,175
United States	1,129	2,774	603
Ireland	867	2,957	1
Other foreign	4,570	4,532	3,683
	$ 23,531	$ 24,273	$ 22,611

Reconciling items for revenues and EBT in a previous table were as follows (in millions):

	2020	2019	2018
Revenues			
Nonreportable segments	$ 133	$ 168	$ 287
Unallocated revenues	1,841	4,723	(100)
	$ 1,974	$ 4,891	$ 187
EBT			
Unallocated revenues	$ 1,841	$ 4,723	$ (100)
Unallocated cost of revenues	(340)	(430)	(486)
Unallocated research and development expenses	(1,046)	(989)	(1,154)
Unallocated selling, general and administrative expenses	(401)	(413)	(576)
Unallocated other income (expenses) (Note 2)	28	(414)	(3,135)
Unallocated interest expense	(599)	(619)	(761)
Unallocated investment and other income, net	105	243	566
Nonreportable segments	(63)	(61)	(356)
	$ (475)	$ 2,040	$ (6,002)

Certain revenues (and reduction to revenues) were not allocated to our segments in our management reports because they were not considered in evaluating segment results. Unallocated revenues in fiscal 2020 were comprised of licensing revenues from Huawei resulting from the settlement agreement and royalties for sales made in the March 2020 and June 2020 quarters under the new global patent license agreement (Note 2). Unallocated revenues in fiscal 2019 were comprised of licensing revenues resulting from the settlement with Apple and its contract manufacturers in April 2019. Unallocated revenues in fiscal 2018 were comprised of reductions to licensing revenues related to the portions of business arrangements that resolved legal disputes and were not allocated to our QTL segment.

Note 9. Fair Value Measurements

The following table presents our fair value hierarchy for assets and liabilities measured at fair value on a recurring basis at September 27, 2020 (in millions):

	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents	$ 2,283	$ 3,248	$ —	$ 5,531
Marketable securities:				
U.S. Treasury securities and government-related securities	—	10	—	10
Corporate bonds and notes	—	4,049	—	4,049
Mortgage- and asset-backed and auction rate securities	—	66	35	101
Equity securities	352	—	—	352
Total marketable securities	352	4,125	35	4,512
Derivative instruments	—	51	—	51
Other investments	501	—	13	514
Total assets measured at fair value	$ 3,136	$ 7,424	$ 48	$ 10,608
Liabilities				
Derivative instruments	$ —	$ 7	$ —	$ 7
Other liabilities	501	—	—	501
Total liabilities measured at fair value	$ 501	$ 7	$ —	$ 508

Activity within Level 3 of the Fair Value Hierarchy. Other investments included in Level 3 at September 27, 2020 and September 29, 2019 were comprised of non-marketable debt instruments, and other liabilities included in

Level 3 at September 29, 2019 were comprised of contingent consideration related to business combinations. Activity for marketable securities, other investments and other liabilities classified within Level 3 of the valuation hierarchy was insignificant during fiscal 2020 (primarily related to impairment of certain of our non-marketable debt instruments, purchases and settlements of non-marketable debt instruments and payments of contingent consideration related to certain business acquisitions) and fiscal 2019 (primarily related to issuances of non-marketable debt instruments and payments of contingent consideration).

Nonrecurring Fair Value Measurements. We measure certain assets and liabilities at fair value on a nonrecurring basis. These assets and liabilities include equity method and non-marketable equity investments, assets acquired and liabilities assumed in an acquisition or in a nonmonetary exchange, and property, plant and equipment and intangible assets that are written down to fair value when they are held for sale or determined to be impaired. During fiscal 2020, certain of our non-marketable equity investments were written down to their estimated fair values, which was recorded as a component of impairment losses on other investments in investment and other income, net (Note 2), and certain other non-marketable equity investments were remeasured to their estimated fair values based on observable price changes in orderly transactions for identical or similar securities, which was recorded as a component of net gains on other investments in investment and other income, net (Note 2). For a significant portion of the impairments, the estimated fair values resulted in a full write-off of the carrying values. The estimation of fair values was judgmental in nature and involved the use of significant estimates and assumptions. We determined these fair value measurements primarily using a market approach and key inputs and assumptions included estimated market value of assets, ability of investees to access additional financing or otherwise continue as a going concern, volatility and liquidation and other rights of the securities we hold.

During 2019, certain property, plant and equipment, non-marketable equity investments, intangible assets and goodwill were written down to their estimated fair values. We also measured certain non-marketable equity investments received as non-cash consideration at fair value on a nonrecurring basis (Note 2). We determined these fair value measurements using cost, market and income approaches.

The estimation of fair value used in the fair value measurements required the use of significant unobservable inputs, and as a result, the fair value measurements were classified as Level 3. We did not have any other significant assets or liabilities that were measured at fair value on a nonrecurring basis in periods subsequent to initial recognition for all periods presented.

Note 10. Marketable Securities

We classify marketable securities as current or noncurrent based on the nature of the securities and their availability for use in current operations. Our marketable securities were comprised as follows (in millions):

	Current		Noncurrent (1)	
	September 27, 2020	September 29, 2019	September 27, 2020	September 29, 2019
Available-for-sale debt securities:				
U.S. Treasury securities and government-related securities	$ 10	$ —	$ —	$ —
Corporate bonds and notes	4,049	4	—	—
Mortgage- and asset-backed and auction rate securities	66	—	35	35
Total available-for-sale debt securities	4,125	4	35	35
Equity securities	352	417	—	1
Time deposit (2)	30	—	—	—
Total marketable securities	$ 4,507	$ 421	$ 35	$ 36

(1) Noncurrent marketable securities were included in other assets.

(2) At September 27, 2020, marketable securities also included a time deposit with an original maturity of greater than 90 days.

The contractual maturities of available-for-sale debt securities were as follows (in millions):

		September 27, 2020
Years to Maturity:		
Less than one year	$	2,868
One to five years		1,192
No single maturity date		100
Total	$	4,160

Debt securities with no single maturity date included mortgage- and asset-backed securities and auction rate securities.

At September 27, 2020, unrealized gains and unrealized losses on available-for-sale debt securities were $20 million and negligible, respectively. At September 29, 2019, unrealized gains and losses on available-for-sale debt securities were negligible.

Note 11. Summarized Quarterly Data (Unaudited)

The following financial information reflects all normal recurring adjustments that are, in the opinion of management, necessary for a fair statement of the results of the interim periods.

The table below presents quarterly data for fiscal 2020 and 2019 (in millions, except per share data):

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2020 (1)				
Revenues (2)	$ 5,077	$ 5,216	$ 4,893	$ 8,346
Operating income (2)	1,030	991	782	3,452
Net income (2)	925	468	845	2,960
Basic earnings per share (4)	$ 0.81	$ 0.41	$ 0.75	$ 2.62
Diluted earnings per share (4)	0.80	0.41	0.74	2.58
2019 (1)				
Revenues (3)	$ 4,842	$ 4,982	$ 9,635	$ 4,814
Operating income (3)	710	940	5,317	701
Net income (3)	1,068	663	2,149	506
Basic earnings per share (4)	$ 0.88	$ 0.55	$ 1.77	$ 0.42
Diluted earnings per share (4)	0.87	0.55	1.75	0.42

(1) Amounts, other than per share amounts, are rounded to millions each quarter. Therefore, the sum of the quarterly amounts may not equal the annual amounts reported.

(2) Revenues, operating income and net income in the fourth quarter of fiscal 2020 included $1.8 billion resulting from the settlement of our prior dispute with Huawei. Net income in the second quarter of fiscal 2020 was impacted by $265 million in non-marketable investment impairments due in part from the impact that the COVID-19 pandemic had on certain of our investees.

(3) Revenues, operating income and net income in the third quarter of fiscal 2019 included $4.7 billion resulting from the settlement with Apple and its contract manufacturers. Operating income and net income in the third quarter of fiscal 2019 were impacted by a $275 million charge related to the 2019 EC Fine. Net income in the first quarter of fiscal 2019 was impacted by an income tax benefit of $570 million due to establishing new U.S. net deferred tax assets from making certain check-the-box elections. Net income in the third quarter of fiscal 2019 was impacted by a $2.5 billion charge to income tax expense resulting from the derecognition of a deferred tax asset related to the distributed intellectual property.

(4) Earnings per share and earnings per share are computed independently for each quarter and the full year based upon respective average shares outstanding. Therefore, the sum of the quarterly earnings per share amounts may not equal the annual amounts reported.

SCHEDULE II
QUALCOMM Incorporated
VALUATION AND QUALIFYING ACCOUNTS

The table below details the activity of the valuation allowance on deferred tax assets for fiscal 2020, 2019 and 2018 (in millions):

	Balance at Beginning of Period	Charged to Costs and Expenses	Other	Balance at End of Period
Year ended September 27, 2020	$ 1,672	$ 60	$ (4)	$ 1,728
Year ended September 29, 2019	1,529	143	—	1,672
Year ended September 30, 2018	863	666	—	1,529

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark one)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended September 29, 2019

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________ .

Commission File Number 0-19528

QUALCOMM Incorporated

(Exact name of registrant as specified in its charter)

Delaware	**95-3685934**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
5775 Morehouse Dr., San Diego, California	**92121-1714**
(Address of Principal Executive Offices)	**(Zip Code)**

(858) 587-1121
(Registrant's telephone number, including area code)

Securities registered pursuant to section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common stock, $0.0001 par value	QCOM	NASDAQ Stock Market

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer	☐	Smaller reporting company	☐	Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant at March 29, 2019 (the last business day of the registrant's most recently completed second fiscal quarter) was $69,171,646,680, based upon the closing price of the registrant's common stock on that date as reported on the NASDAQ Global Select Market.

The number of shares outstanding of the registrant's common stock was 1,141,844,863 at November 4, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Definitive Proxy Statement in connection with the registrant's 2020 Annual Meeting of Stockholders, to be filed with the Commission subsequent to the date hereof pursuant to Regulation 14A, are incorporated by reference into Part III of this Report.

QUALCOMM Incorporated
Form 10-K
For the Fiscal Year Ended September 29, 2019
Index

TRADEMARKS

Qualcomm, Snapdragon, MSM, Hexagon, Adreno and Wireless Reach are trademarks of Qualcomm Incorporated, registered in the United States and other countries.

Other products and brand names may be trademarks or registered trademarks of their respective owners.

In this document, the words “Qualcomm,” “we,” “our,” “ours” and “us” refer only to QUALCOMM Incorporated and its subsidiaries and not any other person or entity. This Annual Report (including, but not limited to, the section regarding Management’s Discussion and Analysis of Financial Condition and Results of Operations) contains forward-looking statements regarding our business, investments, financial condition, results of operations and prospects. Words such as “expects,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” “estimates” and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report. Additionally, statements concerning future matters such as the development of new products, enhancements or technologies, industry and market trends, sales levels, expense levels and other statements regarding matters that are not historical are forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report.

Although forward-looking statements in this Annual Report reflect our good faith judgment, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks and uncertainties and actual results and outcomes may differ materially from the results and outcomes discussed in or anticipated by the forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include without limitation those discussed under “Part I, Item 1A. Risk Factors” below, as well as those discussed elsewhere in this Annual Report. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report. Readers are urged to carefully review and consider the various disclosures made in this Annual Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

PART I

Item 1. Business

We incorporated in California in 1985 and reincorporated in Delaware in 1991. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. Our 52-week fiscal years consist of four equal fiscal quarters of 13 weeks each, and our 53-week fiscal years consist of three 13-week fiscal quarters and one 14-week fiscal quarter. The financial results for our 53-week fiscal years and our 14-week fiscal quarters will not be exactly comparable to our 52-week fiscal years and our 13-week fiscal quarters. The fiscal years ended September 29, 2019 and September 24, 2017 included 52 weeks. The fiscal year ended September 30, 2018 included 53 weeks.

Overview

We are a global leader in the development and commercialization of foundational technologies for the wireless industry. Our technologies and products are used in mobile devices and other wireless products, including network equipment, broadband gateway equipment, consumer electronic devices and other connected devices. Our inventions have helped power the growth in smartphones, which have connected billions of people. We are a pioneer in 3G (third generation) and 4G (fourth generation) wireless technologies and are a leader in 5G (fifth generation) wireless technologies to empower a new era of intelligent, connected devices. Our technologies and products are also used in industry segments and applications beyond mobile, including automotive, computing, IoT (Internet of Things) and networking, allowing devices and objects to connect and communicate with each other in new ways. We derive revenues principally from sales of integrated circuit products and licensing our intellectual property, including patents and other rights.

The foundational technologies we invent help power the modern mobile experience, impacting how the world connects, computes and communicates. We share these inventions broadly through our licensing program, enabling wide ecosystem access to technologies at the core of mobile innovation, and through the sale of our wireless integrated circuit platforms (also known as chips or chipsets) and other products, which accelerates consumer adoption of experiences empowered by these inventions. As a company, we collaborate across the ecosystem, including manufacturers, operators, developers, governments and industry standards organizations, to enable a global environment to drive continued progress and growth.

We have a long history of driving innovation. We have played and continue to play a leading role in developing system level inventions that serve as the foundation for 3G, 4G and 5G wireless technologies. This includes the CDMA (Code Division Multiple Access) and OFDMA (Orthogonal Frequency Division Multiple Access) families of technologies, with the latter encompassing LTE (Long Term Evolution), which, along with TDMA (Time Division

Multiple Access), are the primary digital technologies currently used to transmit a wireless device user's voice or data over radio waves using a public cellular wireless network.

We own significant intellectual property, including patents, patent applications and trade secrets, applicable to products that implement any version of CDMA and OFDMA. Companies in the mobile industry generally recognize that any company seeking to develop, manufacture and/or sell devices or infrastructure equipment that use CDMA-based and/or OFDMA-based technologies will require a license or other rights to use our patents.

We also develop and commercialize numerous other key technologies used in mobile and other wireless devices that help drive end-user demand, and we own substantial intellectual property related to these technologies. Some of these inventions are contributed to and commercialized as industry standards, such as certain video and audio codecs, Wi-Fi, GPS (global positioning system) and Bluetooth. Other technologies that we have developed and that are widely used by wireless devices are not related to any industry standards, such as operating systems, user interfaces, graphics and camera processing functionality, RF (radio frequency), RF front-end (RFFE) and antenna designs and application processor architectures. Our patents cover a wide range of technologies across the entire wireless system (including wireless devices and network infrastructure equipment), not just the portion of such patented technologies incorporated into chipsets.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on CDMA, OFDMA and other technologies for use in mobile devices, wireless networks, broadband gateway equipment, consumer electronic devices, devices used in IoT and automotive telematics and infotainment systems. QTL grants licenses to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including Qualcomm Government Technologies or QGOV (formerly Qualcomm Cyber Security Solutions), as well as other wireless technology and service initiatives.

Industry Trends

As the largest technology platform in the world, mobile has transformed the way we connect, compute and communicate. The scale and pace of innovation in the mobile industry, especially around connectivity and computing capabilities, is also impacting industries beyond wireless, empowering new services, new business models and new experiences. Our inventions and licensing program have been integral to, and provided foundational technologies for, the evolution of the mobile industry.

Advancing connectivity. 3G/4G multimode mobile broadband technology has been a key innovation of mobile, providing users with fast, reliable, always-on connectivity. As of September 30, 2019, there were approximately 6.0 billion 3G/4G connections globally (CDMA-based, OFDMA-based and CDMA/OFDMA multimode) representing 76% of total mobile connections (GSMA Intelligence, November 2019). By 2023, global 3G/4G connections are projected to reach 7.0 billion, with approximately 88% of these connections coming from emerging regions and China (GSMA Intelligence, November 2019).

3G/4G multimode mobile broadband continues to be an important platform for extending the reach and potential of the Internet. This is amplified in emerging regions and China, where, as of September 30, 2019, 3G/4G mobile broadband connections are estimated to be approximately seven times the number of fixed Internet household connections (GSMA Intelligence November 2019 and PT June 2019). In China, 3G/4G multimode services have experienced strong adoption since being launched in 2013, with more than 1.4 billion connections estimated as of September 30, 2019 (GSMA Intelligence, November 2019). In India, mobile operators continue to expand their 3G/4G multimode services, providing consumers with the benefits of advanced mobile broadband connectivity while creating new opportunities for device manufacturers and other members of the mobile ecosystem. 3G/4G mobile broadband may be the first and, in many cases, the only way that people in these regions access the Internet. The transition of wireless networks and devices to 3G/4G has not only been driven by the number of affordable handsets available in emerging regions and China, but also by the variety of flexible and affordable data plans being offered by mobile operators.

With the first 5G global specifications defined in 2018 by 3GPP (3rd Generation Partnership Project), an industry standards development organization, initial commercial 5G network deployments and device launches, which focus on enhanced mobile broadband services, began in 2019 and will continue into 2020 and beyond. 5G is designed to enhance mobile broadband services, including ultra-high definition (4K) video streaming, near-instant access to cloud services and augmented and virtual reality applications, with lower latency and multi-gigabit user data speeds, and bring more capacity and efficiency to networks, which may enable operators to offer new unlimited mobile data plans.

Looking ahead, we expect future releases of 5G to expand to new industries beyond traditional cellular communications and to create new business models and services, such as autonomous vehicles and artificial intelligence-based platforms designed to bring greater autonomy to manufacturing and other industrial applications (known as industrial IoT), through ultra-reliable, ultra-low latency communication links. We also expect 5G will enable connecting a significant number of “things” (also known as IoT, including the connected home, smart cities, wearables and voice and music devices), with connectivity designed to meet diverse (low) power and cost requirements, as well as to address both low and high complexity applications.

Most 5G devices are expected to include multimode support for 3G, 4G and Wi-Fi, enabling service continuity where 5G has yet to be deployed and simultaneous connectivity across 4G technology, while also allowing mobile operators to utilize current network deployments. At the same time, 4G is expected to continue to evolve in parallel with the further development of 5G and become fundamental to many of the key 5G technologies (through multi-connectivity) in areas such as support for unlicensed spectrum, gigabit LTE user data speeds and LTE IoT that meets low power and cost requirements. The first phase of 5G networks supports mobile broadband services for the smartphone form factor both in lower spectrum bands below 6 GHz (sub-6), as well as higher bands above 6 GHz, including millimeter wave (mmWave). As with previous generations of mobile networks, it will take time to deploy new 5G networks.

Consumer demand in smartphones. From October 2018 through September 2019, approximately 1.4 billion smartphones are estimated to have shipped globally, representing a year-over-year decrease of approximately 4% (IDC, Mobile Phone Tracker, 2019Q3). Smartphone shipments in calendar 2020 are expected to be approximately flat year-over-year (IDC Quarterly Mobile Phone Tracker, 2019Q3). The slow-down in smartphone demand that began in the year ended September 2019, and that is expected to continue into calendar 2020, reflects further lengthening of replacement cycles, particularly in developed regions and China, where consumer demand is increasingly driven by new product launches and/or innovation cycles as the industry transitions to 5G.

Consumer demand for new types of experiences, combined with the needs of mobile operators and device manufacturers to provide differentiated features and services, is driving continued innovation within the smartphone. As a result, the smartphone has become the go-to device for social networking, music and video streaming, gaming, email and web browsing, among others. It is expected that 5G connectivity will drive further innovations within the smartphone and offer enhanced connectivity, which in turn will enable new applications. Given its advanced capabilities and utility, the smartphone has replaced many traditional consumer electronic devices, including digital cameras, video cameras, standalone GPS units, gaming devices and music players.

Transforming other industries. With their significant scale and highly integrated solutions, industries beyond mobile, including automotive, computing, IoT and networking, among others, are leveraging the same technology innovations found in today's leading smartphones to enhance existing products and services as well as to create new products and services. Our inventions that contribute to the formation of advanced cellular technologies, such as 3G/4G and now 5G connectivity, are helping to drive, and in the case of 5G accelerate the pace of, this transformation. For example, in the automotive industry, approximately 72% of new vehicles produced are projected to have cellular connectivity by 2025, compared to 40% in 2018 (Strategy Analytics, October 2019). In addition, the installed base of non-mobile devices with cellular connectivity, which includes IoT devices among others, is projected to grow more than 150% between 2019 and 2023 (ABI Research, February 2019).

Wireless Technologies Overview

The growth in the use of wireless devices worldwide and the demand for data services and applications requires continuous innovation to improve the user experience, support new services, increase network capacity, make use of different frequency bands and allow for dense network deployments. To meet these requirements, different wireless communications technologies continue to evolve. For nearly three decades, we have invested heavily in research and development and have developed foundational technologies that drive the continued evolution of the wireless industry, including CDMA and OFDMA. As a result, we have developed and acquired (and continue to develop and acquire) significant related intellectual property. This intellectual property has been incorporated into the most widely accepted and deployed cellular wireless communications technology standards, and we have licensed it to several hundred licensees, including leading wireless device and infrastructure manufacturers.

Cellular wireless technologies. Relevant cellular wireless technologies can be grouped into the following categories.

TDMA-based. TDMA (Time Division Multiple Access)-based technologies are characterized by their access method allowing several users to share the same frequency channel by dividing the signal into different time slots. Most of these systems are classified as 2G (second generation) technology. The main examples of TDMA-based technologies are GSM (deployed worldwide), IS-136 (deployed in the Americas) and Personal Digital Cellular (PDC) (deployed in Japan).

The transition of wireless devices from 2G to 3G/4G and the emergence of 5G technologies continued around the world with estimated 3G/4G/5G connections up 11% year-over-year (GSMA Intelligence, November 2019). As of September 30, 2019, there were approximately 1.9 billion GSM connections worldwide, representing approximately 24% of total cellular connections, down from 30% as of September 30, 2018 (GSMA Intelligence, November 2019).

CDMA-based. CDMA-based technologies are characterized by their access method allowing several users to share the same frequency and time by allocating different orthogonal codes to individual users. Most of the CDMA-based technologies are classified as 3G technology.

There are a number of variants of CDMA-based technologies deployed around the world, in particular CDMA2000, EV-DO (Evolution Data Optimized), WCDMA (Wideband CDMA) and TD-SCDMA (Time Division-Synchronous CDMA) (deployed exclusively in China). CDMA-based technologies provide vastly improved capacity for voice and low-rate data services as compared to analog technologies and significant improvements over TDMA-based technologies such as GSM. To date, these technologies have seen many revisions. New specifications continue to be defined by 3GPP.

CDMA technologies ushered in a significant increase in mobile broadband data services. As of September 30, 2019, there were approximately 2.1 billion CDMA-based connections worldwide, representing approximately 27% of total cellular connections, down from 28% as of September 29, 2018 as consumers migrate to OFDMA-based technologies (GSMA Intelligence, November 2019).

OFDMA-based. OFDMA-based technologies are characterized by their access method allowing several users to share the same frequency band and time by allocating different subcarriers to individual users. Most of the OFDMA-based technologies to be deployed or expected to be deployed through the end of 2019 are classified as 4G technology. 5G heavily leverages OFDMA-based technologies. 3GPP developed 4G specifications through the standardization of the radio component (LTE) and the core network component (Enhanced Packet Core or EPC). Similarly, 3GPP has developed 5G specifications through the specification of the radio component (New Radio or NR) and the core network component (5G Core or 5GC). Unlike 4G that has fixed Orthogonal Frequency Division Multiplexing (OFDM) parameterization, 5G has multiple OFDM parameterizations to address a wide range of spectrum and use cases. We continue to play a significant role in the development of LTE, LTE Advanced and LTE Advanced Pro, which are the predominant 4G technologies currently in use.

LTE is incorporated in 3GPP specifications starting from Release 8 and uses OFDMA in the downlink and single carrier FDMA (Frequency Division Multiple Access) in the uplink. LTE has two modes, FDD (frequency division duplex) and TDD (time division duplex), to support paired and unpaired spectrum, respectively, and continues to evolve as 3GPP defines new specifications. The principal benefit of LTE is its ability to leverage a wide range of spectrum (bandwidths of up to 20 MHz or more through aggregation). LTE is designed to seamlessly interwork with 3G technologies through multimode devices.

LTE Advanced brings many more enhancements, including carrier aggregation, advanced antenna techniques and optimization for small cells. Apart from improving the performance of existing networks, there are also new enhancements under the umbrella of LTE Advanced Pro, including LTE Direct for proximity-based device-to-device discovery, improved LTE broadcast, optimizations of narrowband communications designed for IoT (known as eMTC and NB-IoT) and the ability to use LTE Advanced in unlicensed spectrum (LTE Unlicensed) as well as in emerging shared spectrum bands in various regions (such as the Citizens Broadband Radio Service, or CBRS, in the United States). There are multiple options for deploying LTE Unlicensed for different deployment scenarios.

- LAA (Licensed Assisted Access), introduced as part of 3GPP Release 13, aggregates unlicensed and licensed spectrum in the downlink and is being deployed globally by mobile operators. LAA is a key technology for many operators with limited licensed spectrum to deliver Gigabit LTE speeds.
- eLAA (enhanced LAA) introduced as part of 3GPP Release 14, is an evolution of LAA, enables aggregation of unlicensed and licensed spectrum in the uplink.

Beginning with Release 14, 3GPP specifications provide enhancements specifically for vehicular communications known as cellular vehicle-to-everything (C-V2X), which includes both direct communication (vehicle-to-vehicle, vehicle-to-infrastructure and vehicle-to-pedestrian) in dedicated spectrum that is independent of a cellular network and cellular communications with networks in traditional mobile broadband licensed spectrum. C-V2X is designed to serve as the foundation for Intelligent Transportation Systems (ITS), enabling vehicles to communicate with each other and everything around them providing non-line-of-sight awareness for enhanced road safety and traffic efficiency. In future 3GPP releases (starting in Release 16, which is expected to be completed in June 2020), C-V2X is expected to benefit from the incorporation of 5G features, such as high throughput, lower latency and ultra-reliable communication capabilities to enable a higher level of performance and predictability as needed for automated driving and other advanced use cases.

As of September 30, 2019, there were approximately 3.8 billion global LTE connections worldwide, representing approximately 49% of total cellular connections, up from 41% as of September 30, 2018 (GSMA Intelligence, November 2019).

As of October 2019, approximately 900 wireless operators have commercially deployed or started testing LTE networks and 777 operators have commercially launched LTE in 228 countries, including 308 operators in 135 countries having commercially launched LTE Advanced networks (GSA, November 2019).

The wireless industry is actively developing and commercializing 5G technologies. Initial commercial 5G network deployments and device launches began in calendar 2019, and we expect that 5G network deployments and device launches will increase over the next several years. Some of our inventions that serve as foundational technologies for 3G and 4G now also serve as foundational technologies for 5G. 5G is designed to transform the role of wireless technologies and already incorporates or soon will incorporate advancements on 3G/4G features available today, including device-to-device capabilities and the use of all different types of spectrum (including licensed, unlicensed and shared spectrum). We continue to play a significant role in driving advancements in 5G, including contributing to 3GPP standardization activities that are defining the continued evolution of 5G NR and 5GC standards.

The first global set of 5G standards is incorporated in 3GPP specifications starting from Release 15, which was initially completed in March 2018 and subsequently updated in September 2018 and June 2019. Release 15 enables different architecture deployment choices of 5G networks while sharing the same radio access technology. The main advantages of 5G are its ability to target diverse services with very different technical requirements (from enhanced mobile broadband to massive IoT to mission critical services), its utilization of diverse types of spectrum (from the low bands to millimeter bands) and its ability to support diverse types of deployment scenarios. Predominant technological components of 5G include the ability to address ultra-reliable, low-latency communication, new channel coding schemes to efficiently support large data blocks, multiple-input multiple-output (MIMO) to increase coverage and network capacity and mobile millimeter wave to increase the data rate offered to users. 5G uses OFDMA in the downlink and either OFDMA or single carrier FDMA in the uplink depending on the use case. Like 3G and 4G, 5G supports carrier aggregation across spectrum bands, across FDD and TDD and across licensed and unlicensed spectrum (starting with Release 16), and 5G also supports dual connectivity across 4G and 5G. A key benefit of 5G is its ability to take advantage of very wide channel bandwidth such as 800/400/100 MHz (compared to LTE's 20 MHz maximum bandwidth, which requires carrier aggregation to combine spectrum beyond 20 MHz). As with previous cellular generations, 5G is designed to support seamless compatibility with 2G/3G/4G technologies through multimode devices.

As of October 2019, 258 wireless operators in 94 countries have demonstrated, are testing, trialing or have been licensed to begin field trials of 5G-enabling and candidate technologies, and an additional 69 wireless operators in 50 countries have announced their intentions to make 5G available to their customers by 2022 (GSA, November 2019).

Other (non-cellular) wireless technologies. There are other, non-cellular wireless technologies that have also been broadly adopted.

Wireless Local Area Networks. Wireless local area networks (WLAN), such as Wi-Fi, link two or more nearby devices wirelessly and usually provide connectivity through an access point. Wi-Fi systems are based on standards developed by the Institute of Electrical and Electronics Engineers (IEEE) in the 802.11 family of standards. 802.11ax, the latest standard, adds advanced features such as downlink and uplink OFDMA and uplink multiple-user MIMO to the 802.11 baseline standard. This technology primarily targets connectivity for mobile devices, tablets, laptops and other consumer electronic devices using 2.4 GHz and 5 GHz spectrum. For 60GHz mmWave technology, 802.11ay adds wider channel bandwidth and the use of MIMO to the existing 802.11ad (also known as Gigabit Wi-Fi or WiGig) standard. 802.11ah was finalized in early 2017 and targets sub-1 GHz spectrum and is expected to be a solution for "connected home" applications that require long battery life. We played a leading role in the development of 802.11ac, 802.11ax, 802.11ay, 802.11ah, 802.11ad and 802.11p, and continue to play a lead role in the evolution of 802.11 family of standards. We are actively involved in innovative programs developed in the context of the Wi-Fi Alliance, a non-profit organization that drives global Wi-Fi adoption and evolution.

Bluetooth. Bluetooth is a wireless personal area network that provides wireless connectivity between devices over short distances ranging from a few centimeters to approximately one hundred meters. Bluetooth technology provides wireless connectivity to a wide range of fixed or mobile consumer electronic devices. Bluetooth functionalities are standardized by the Bluetooth Special Interest Group in various versions of the specification (from 1.0 to 5.1), which include different functionalities, such as enhanced data rate, low energy and mesh technologies. We are a leading contributor to Bluetooth technologies in the areas of mobile devices, HID (human interface device), A/V (audio/video) and mesh technologies.

Location Positioning Technologies. Location positioning technologies continue to evolve in order to deliver an enhanced commercial location experience and comply with the new mandates on location for E911 calls from the United States Federal Communications Commission. We are a key developer of the Assisted-GPS (A-GPS), Assisted Global Navigation Satellite System (A-GNSS) and WLAN positioning technologies used in most cellular handsets today. For uses requiring the best reliability and accuracy for E911 services and navigational based services, A-GPS, A-GNSS and WLAN provide leading-edge solutions.

The industry continues to evolve to support additional inputs for improving the location experience. Our products and intellectual property now support multiple constellations for A-GNSS, including: GPS, GLONASS, Galileo and BeiDou; Wi-Fi-based and Bluetooth-based positioning for WLAN, including, Wi-Fi RSSI (received signal strength indication) and Wi-Fi RTT (round-trip time) signals for indoor location; observed time difference of arrival positioning for LTE access (e.g., in rural and indoor areas); and third-party inertial sensors. The combination of these different location solutions is used to ensure accurate location availability in all areas.

Other Significant Technologies used in Cellular and Certain Consumer Electronic Devices and Networks. We have played and continue to play a leading role in developing and/or have acquired many of the other technologies used across the wireless system, such as cellular handsets and certain other consumer electronic devices and networks, including:

- RFFE chips and modules (including power amplifier modules, envelope tracker, antenna tuners, diversity modules, RF switches and micro-acoustic RF filters) designed for improved signal performance and reduced power consumption, while simplifying the design for manufacturers to develop LTE/5G multimode, multiband devices, including sub-6 GHz and mmWave devices;
- graphics and display processing functionality;
- video coding based on the HEVC (high efficiency video codec) standard, which is being deployed to support 4K video and immersive media content;
- audio coding, including EVS (enhanced voice services) and MPEG-H 3D Audio;
- the latest version of 3GPP’s codec for multimedia use and for voice/speech use;
- multimedia transport, including MPEG-DASH (Dynamic Adaptive Streaming over HTTP) enabling advanced multimedia experiences;
- camera and camcorder functions;
- operating system and user interface features;
- on-device artificial intelligence (AI) features, including machine learning platforms;
- augmented reality (AR) and virtual reality (VR) features enabling new types of user experiences;
- security and content protection systems for enhanced device security without compromising the user experience and ultrasonic fingerprint readers for single touch authentication;
- volatile (LP-DDR2, 3, 4) and non-volatile (eMMC) memory and related controllers; and
- power management systems for improved battery life and device charging.

Operating Segments

We have three reportable segments. We conduct business primarily through QCT (Qualcomm CDMA Technologies) and QTL (Qualcomm Technology Licensing), while QSI (Qualcomm Strategic Initiatives) makes strategic investments. Revenues in fiscal 2019, 2018 and 2017 for our reportable segments were as follows (in millions, except percentage data):

	2019	2018	2017
QCT	$ 14,639	$ 17,282	$ 16,479
As a percent of total	60 %	76 %	74 %
QTL	$ 4,591	$ 5,042	$ 6,412
As a percent of total	19 %	22 %	29 %
QSI	$ 152	$ 100	$ 113
As a percent of total	1 %	— %	1 %

QCT Segment. QCT is a leading developer and supplier of integrated circuits and system software based on CDMA, OFDMA and other technologies for use in wireless voice and data communications, networking, application processing, multimedia and global positioning system products. QCT’s integrated circuit products are sold and its system software is licensed to manufacturers that use our products in a broad range of devices in support of CDMA- and OFDMA-based technologies, from low-tier, entry-level devices primarily for emerging regions to premium-tier devices, including mobile devices (primarily smartphones), tablets, laptops, data modules, handheld wireless computers and gaming devices, access points and routers, broadband gateway equipment, data cards and infrastructure equipment, IoT devices and applications, other consumer electronics and automotive telematics and infotainment systems. Our 3G/4G/5G modem roadmap delivers the latest network technologies across multiple product tiers and devices. This roadmap is the result of extensive collaboration with manufacturers, operators, developers, governments and industry standards organizations, as well as our years of research into emerging network standards and the development of integrated circuits that take advantage of these new standards, while maintaining backward compatibility with existing standards.

The Qualcomm® Snapdragon™ family of integrated circuit products include the Snapdragon mobile, compute and automotive platforms. Each platform consists of application processors and wireless connectivity capabilities, including our cellular modem that provides core baseband modem functionality for voice and data communications, non-cellular wireless connectivity (such as Wi-Fi and Bluetooth) and global positioning functions. Our Snapdragon application processor functions include security, graphics, display, audio, video, camera and AI. Our central processing units are designed based on ARM architecture and are designed to deliver high levels of compute performance at low power. Our Qualcomm® Hexagon™ processors are designed to support a variety of signal processing applications, including AI, audio and sensor processing. Qualcomm® Adreno™ graphics processing units are designed to deliver high quality graphics performance for visually rich 3D gaming and user interfaces. In addition to the highly integrated core system on a chip (SoC), we also design and supply supporting components, including the RF, PM (Power Management), audio, codecs, speaker amps and additional wireless connectivity integrated circuits. These supporting components, in addition to our cellular modems and application processors comprising our core SoC, are also sold as individual components. The combination of the Snapdragon SoC, system software and supporting components provide an overall platform with optimized performance and efficiency, enabling manufacturers to design and deliver powerful, slim and power-efficient devices ready for integration with the complex cellular networks worldwide.

Our portfolio of RF products includes Qualcomm® RFFE components that are designed to simplify the RF design for 5G front-end, LTE multimode and multiband mobile devices, to reduce power consumption and to improve radio performance. QCT offers an advanced portfolio of RFFE products for mobile devices, infrastructure, automotive, industrial IoT and other IoT applications. Our technologies provide comprehensive RFFE product offerings with system level performance from the modem and transceiver to the antenna that include power tracking, tuning systems, switching, multimode-multiband power amplification, low noise amplifiers, complex transmit and receive modules, in addition to discrete filtering applications across cellular, automotive, infrastructure, industrial IoT and other IoT industries.

Our wireless connectivity products also consist of integrated circuits and system software for Wi-Fi, Bluetooth, frequency modulation (FM) and near field communications (NFC), as well as technologies that support location data and services, including GPS, GLONASS, BeiDou and Galileo. Our wireless connectivity products provide additional connectivity for mobile devices, tablets, laptops, IoT applications and automotive telematics and infotainment systems. QCT also offers standalone Wi-Fi, Bluetooth, fingerprint sensor, applications processor and Ethernet products for mobile devices, consumer electronics, computers, IoT applications, other connected devices and automotive telematics and infotainment systems. Our networking products include Wi-Fi, Ethernet and Powerline chips, network processors and software. These products help enable home and business networks to support the growing number of connected devices, digital media and data services.

Other than for our RFFE modules and RF filter acoustic products, QCT utilizes a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Therefore, we primarily rely on independent third-party suppliers to perform the manufacturing and assembly, and most of the testing, of our integrated circuits based primarily on our proprietary designs and test programs. Our suppliers also are responsible for the procurement of most of the raw materials used in the production of our integrated circuits. Integrated circuits are die cut from silicon wafers that have completed the package assembly and test manufacturing processes. The semiconductor package supports the electrical contacts that connect the integrated circuit to a circuit board. Die cut from silicon wafers are the essential components of all of our integrated circuits and a significant portion of the total integrated circuit cost. We employ both turnkey and two-stage manufacturing models to purchase our integrated circuits. Under the turnkey model, our foundry suppliers are responsible for delivering fully assembled and tested integrated circuits. Under the two-stage manufacturing model, we purchase die in singular or wafer form from semiconductor manufacturing foundries and contract with separate third-party suppliers for manufacturing services such as wafer bump, probe, assembly and the majority of our final test requirements. The primary foundry suppliers for our various digital, analog/mixed-signal, RF and PM integrated circuits are Global Foundries, Samsung Electronics, Semiconductor Manufacturing International, Taiwan Semiconductor Manufacturing Company (TSMC) and United Microelectronics. The primary semiconductor assembly and test suppliers are Advanced Semiconductor Engineering, Amkor Technology, Siliconware Precision Industries and STATSChipPAC. The majority of our foundry and semiconductor assembly and test suppliers are located in the Asia-Pacific region.

QCT uses internal fabrication facilities to manufacture RFFE modules and RF filter acoustic products, and its manufacturing operations consist of front-end and back-end processes. The front-end processes primarily take place at manufacturing facilities located in Germany and Singapore and involve the imprinting of substrate silicon wafers with the circuitry required for semiconductors to function (also known as wafer fabrication). The back-end processes involve the assembly, packaging and test of semiconductors to prepare RFFE modules and RF filter acoustic products for distribution. The back-end manufacturing facilities are located in China, Germany and Singapore.

QCT's sales are primarily made through standard purchase orders for delivery of products. QCT generally allows customers to reschedule delivery dates within a defined time frame and to cancel orders prior to shipment with or without payment of a penalty, depending on when the order is canceled. The industry in which QCT operates is intensely competitive. QCT competes worldwide with a number of U.S. and international designers and manufacturers of semiconductors. As a result of global expansion by foreign and domestic competitors, technological changes, lengthening replacement cycles for mobile devices, device manufacturer concentrations and the potential for further industry consolidation, we anticipate the industry to remain very competitive. We believe that the principal competitive factors for our products include performance, level of integration, quality, compliance with industry standards, price, time-to-market, system cost, design and engineering capabilities, new product innovation, growth and scaling of distribution channels, desire by certain customers to use multiple suppliers and customer support. QCT also competes in both single-mode and multimode environments against alternative communications technologies. Additional competitive factors exist for QCT product offerings that have expanded into adjacent industry segments outside traditional cellular industries, including automotive, computing, IoT and networking. The automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in a significant barrier to entry and may result in increased costs.

QCT's current competitors include, but are not limited to, companies such as Broadcom, Cirrus Logic, Cypress Semiconductor, HiSilicon, Intel, Marvell, Maxim, MediaTek, Microchip Technology, Murata, Nordic Semiconductor, Nvidia, NXP Semiconductors, Qorvo, Realtek Semiconductor, Renesas, Samsung, Sequans Communications, Skyworks and Spreadtrum Communications (which is controlled by Tsinghua Unigroup). QCT also faces competition from products internally developed by our customers, including some of our largest customers, and from some early-stage companies. Our competitors devote significant amounts of their financial, technical and other resources to develop and market competitive products and, in some cases, to develop and adopt competitive digital communication or signal processing technologies, and those efforts may materially and adversely affect us. Although we have attained a significant position in the wireless industry, many of our current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to use our competitors' integrated circuit products, to utilize their own internally-developed integrated circuit products or sell such products to others, including by selling them together with certain of their other products, or to choose alternative technologies; lower cost structures or a willingness and ability to accept lower prices and lower or negative margins for their products, particularly in China; foreign government support of other technologies or competitors or original equipment manufacturers (OEMs) that sell devices that do not contain our chipsets; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and OEMs in certain geographic regions (such as China); more experience in adjacent industry segments outside traditional cellular industries (such as automotive, computing, IoT and networking); and a more established presence in certain regions. These relationships may affect customers' decisions to purchase products or license technology from us. Accordingly, new competitors or alliances among competitors could emerge and rapidly acquire significant market positions to our detriment.

QTL Segment. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale and/or use of certain wireless products, including, without limitation, products implementing CDMA2000, WCDMA, CDMA TDD, LTE and/or OFDMA-based 5G standards and their derivatives. We have historically licensed our cellular standard-essential patents together with other Qualcomm patents that may be useful to such licensed products because in the past, licensees typically have desired to obtain the commercial benefits of receiving such broad patent rights from us. However, since 2015, our standard practice in China is to offer licenses to our 3G and 4G (and now 5G) cellular standard-essential Chinese patents for devices sold for use in China separately from our other patents. In addition, we also offer licenses to only our cellular standard-essential patents (including 3G, 4G and 5G) for both single-mode and multimode devices on a worldwide basis, and since 2018, an increasing number of new and existing licensees have elected to enter into worldwide license agreements covering only our cellular standard essential patents. Going forward, we continue to anticipate that a significant portion of QTL's licensing revenues will be derived from licensees that have entered into license agreements covering only Qualcomm's cellular standard essential patents. Our licensees manufacture wireless products including mobile devices (including handsets), other consumer devices (e.g., tablets and laptops), plug-in end user data modem cards and embedded modules for incorporation into machine-to-machine devices and certain end user products (excluding handsets and tablets), as well as infrastructure equipment required to establish and operate a network and equipment to test networks and cellular devices.

Since our founding in 1985, we have focused heavily on technology development and innovation. These efforts have resulted in a leading intellectual property portfolio related to foundational, system level technologies for the wireless industry. We have an extensive portfolio of United States and foreign patents, and we continue to pursue patent applications around the world. Our patents have broad coverage in many countries, including Brazil, China, India, Japan, South Korea, Taiwan, the United States and countries in Europe and elsewhere. A substantial portion of our patents and patent applications relate to digital wireless communications technologies, including patents that are essential or may be important to the commercial implementation of CDMA2000, WCDMA (UMTS), TD-SCDMA, TD-CDMA (Time Division CDMA), OFDMA-based LTE and OFDMA-based 5G products. Our patent portfolio is the most widely and extensively licensed in the industry, with more than 300 licensees. Additionally, we have a substantial patent portfolio related to key technologies used in communications and other devices and/or related services, some of which were developed in industry standards development bodies. These include certain video codecs, audio codecs, Wi-Fi, memory interfaces, wireless power, GPS and positioning, broadcast and streaming protocols, and short-range communication functionalities, including NFC and Bluetooth. Our patents cover a wide range of technologies across the entire wireless system, including the device (handsets and other wireless devices), not just the portion of such patented technologies incorporated into chipsets, and the network. Over the years, a number of companies have challenged our patent position, but companies in the mobile communications industry generally recognize that any company seeking to develop, manufacture and/or sell certain wireless products that use CDMA-based and/or OFDMA-based technologies will require a license or other rights to use our patents.

We have licensed or otherwise provided rights to use our patents to hundreds of companies on industry-accepted terms. Unlike some other companies in our industry that hold back certain key technologies, we offer companies substantially our entire patent portfolio for use in cellular devices and cell site infrastructure equipment. Our strategy to make our patented technologies broadly available has been a catalyst for industry growth, helping to enable a wide range of companies offering a broad array of wireless products and features while increasing the capabilities of and/or driving down average and low-end selling prices for 3G handsets and other wireless devices. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, encouraging innovative applications, supporting equipment manufacturers with integrated chipset and software products and focusing on improving the efficiency of the airlink for wireless operators, we have helped 3G and 3G/4G multimode evolve and grow and reduce device pricing, all at a faster pace than the 2G (second generation) technologies such as GSM that preceded it. 5G network deployments and commercial 3G/4G/5G multimode device sales began in 2019 and will continue into 2020 and beyond. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, 5G will continue to encourage innovative applications through enhanced mobile broadband services with lower latency and multi-gigabit user data speeds and bring more capacity and efficiency to wireless networks.

Upon the initial deployment of OFDMA-based networks, the products implementing such technologies generally have been multimode and implement OFDMA-based and CDMA-based technologies. The licenses granted under our existing license agreements generally cover multimode CDMA/OFDMA (3G/4G/5G) devices, and our licensees are obligated to pay royalties under their license agreements for such devices.

Standards bodies have been informed that we hold patents that might be essential for all 3G standards that are based on CDMA. We have committed to such standards bodies that we will offer to license our essential patents for these CDMA standards consistent with our commitments to those bodies. We have also informed standards bodies that we hold patents and pending patent applications that are potentially essential for LTE standards, including FDD and TDD versions and have committed to offer to license our essential patents for these LTE standards consistent with our commitments to those bodies. We have informed standards bodies that we hold patents and pending patent applications that are essential for 5G technologies and have committed to offer to license our essential patents for these 5G standards consistent with our commitments to those bodies. We have made similar commitments with respect to certain other technologies implemented in industry standards.

QTL licensing revenues include license fees and royalties. Licensees pay royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee’s) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets, laptops and smartwatches, and provide for a maximum royalty amount payable per device. Revenues generated from royalties are subject to quarterly and annual fluctuations.

The vast majority of QTL revenues have been generated through our licensees’ sales of CDMA2000-based, WCDMA-based and LTE-based products (including 3G and 3G/4G multimode devices), such as smartphones and feature phones. We have invested and continue to invest in both the acquisition and development of OFDMA technology and intellectual property and have generated the industry leading patent portfolio applicable to LTE, LTE Advanced and LTE Advanced Pro. Some of our inventions that serve as foundational technologies for 3G and 4G now also serve as foundational technologies for 5G. We have invested and continue to invest in the development of 5G and continue to play a significant role in driving advancements of 5G. Nevertheless, we face competition in the development of intellectual property for future generations of digital wireless communications technologies and services.

Separate and apart from licensing manufacturers of wireless devices and network equipment, we have entered into certain arrangements with competitors of our QCT segment, such as Broadcom. A principal purpose of these arrangements is to provide our QCT segment and the counterparties certain freedom of operation with respect to each party's integrated circuits business. In every case, these agreements expressly reserve the right for QTL to seek royalties from the customers of such integrated circuit suppliers with respect to such suppliers' customers' sales of CDMA-, WCDMA- and OFDMA-based wireless devices into which such suppliers' integrated circuits are incorporated.

Our license agreements also may provide us with rights to use certain of our licensees' technology and intellectual property to manufacture, sell and/or use certain components (e.g., Application-Specific Integrated Circuits) and related software, cellular devices and/or infrastructure equipment.

We are currently subject to various governmental investigations and private legal proceedings challenging our patent licensing practices, which may require us to change our patent licensing practices as described more fully in this Annual Report in "Part I, Item 1A. Risk Factors" under the heading "Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations" and in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

QSI Segment. QSI makes strategic investments primarily through our Qualcomm Ventures arm that are focused on expanding or opening new opportunities for our technologies as well as supporting the design and introduction of new products and services (or enhancing existing products or services). Many of these strategic investments are in early-stage companies in a variety of industries and applications, including, but not limited to, artificial intelligence, automotive, digital healthcare, enterprise software and solutions, IoT, mobile and networking. Investments primarily include non-marketable equity securities and to a lesser extent, non-marketable convertible debt instruments. In addition, QSI segment results include revenues and related costs associated with development contracts with one of our equity method investees. As part of our strategic investment activities, we intend to pursue various exit strategies for each of our QSI investments in the foreseeable future.

Other Businesses. Nonreportable segments include our Qualcomm Government Technologies or QGOV (formerly Qualcomm Cyber Security Solutions) business and other wireless technology and service initiatives. During fiscal 2019, we completed the sale of our mobile health nonreportable segment, and we combined our Small Cells nonreportable segment into our QCT segment. Prior period segment information has not been adjusted to conform to the new segment presentation as such adjustments are insignificant. QGOV provides development and other services and sells related products to U.S. government agencies and their contractors. Additional information regarding our operating segments is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information." Information regarding seasonality is provided in this Annual Report in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in the "Our Business and Operating Segments" section under the heading "Seasonality."

Cost Plan

In the second quarter of fiscal 2018, we announced a Cost Plan designed to align our cost structure to our long-term margin targets. As part of this plan, we initiated a series of targeted actions across our businesses with the objective to reduce annual costs by $1 billion, excluding incremental costs resulting from any future acquisition of a business. Actions taken under this plan have been completed and resulted in us achieving substantially all of this target in fiscal 2019 based on our run rate exiting the second quarter of fiscal 2019, excluding litigation costs that were in excess of the baseline spend.

Additional information regarding our Cost Plan is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 10. Cost Plan."

Corporate Structure

We operate our businesses through our parent company, QUALCOMM Incorporated, and multiple direct and indirect subsidiaries. We have developed our corporate structure in order to address various legal, regulatory, tax, contractual compliance, operational and other matters. Substantially all of our products and services businesses, including QCT, and substantially all of our engineering, research and development functions, are operated by Qualcomm Technologies, Inc. (QTI), a wholly-owned subsidiary of QUALCOMM Incorporated, and QTI's subsidiaries. QTL is operated by QUALCOMM Incorporated, which owns the vast majority of our patent portfolio. Neither QTI nor any of its subsidiaries has any right, power or authority to grant any licenses or other rights under or to any patents owned by QUALCOMM Incorporated.

Revenue Concentrations and Significant Customers

A small number of customers/licensees historically have accounted for a significant portion of our consolidated revenues. In fiscal 2019, 2018 and 2017, revenues from Apple Inc. and its contract manufacturers (Hon Hai Precision Industry Co., Ltd./Foxconn, its affiliates and other suppliers to Apple), Samsung Electronics and combined revenues from GuangDong

OPPO Mobile Telecommunications and vivo Communication Technology, and their respective affiliates (including BBK), each comprised 10% or more of consolidated revenues. Revenues from Xiaomi also comprised 10% or more of consolidated revenues in fiscal 2019 and 2018. Revenues in fiscal 2018 and 2017 were negatively impacted by our prior dispute with Apple Inc. and its contract manufacturers. Revenues in fiscal 2019 were positively impacted by our settlement of such dispute in the third quarter of fiscal 2019. We expect to begin recording revenues for new chipset models under our recently announced multi-year chipset agreement with Apple in the second half of fiscal 2020.

Research and Development

The wireless communications industry is characterized by rapid technological change, evolving industry standards and frequent new product introductions, requiring a continuous effort to enhance existing products and technologies and to develop new products and technologies. We have significant engineering resources, including engineers with substantial expertise in CDMA, OFDMA and a broad range of other technologies. Using these engineering resources, we expect to continue to invest in research and development in a variety of ways in an effort to extend the demand for our products, and to utilize that research and development in adjacent industry segments outside of traditional cellular industries (such as automotive, computing, IoT and networking), including continuing the development of CDMA, OFDMA and other technologies (such as RF), developing alternative technologies for certain specialized applications, participating in the formulation of new voice and data communication standards and technologies, and assisting in deploying digital voice and data communications networks around the world. Our research and development team has a demonstrated track record of innovation in voice and data communication technologies and application processor technology, among others.

We continue to invest significant resources towards advancements in OFDMA-based 4G technologies (including LTE) and 5G technologies. We also engage in acquisitions and other transactions, such as joint ventures, to meet certain technology needs, to obtain development resources or open or expand opportunities for our technologies and to support the design and introduction of new products and services (or enhancing existing products and services) for voice and data communications and new industry segments outside of the traditional cellular industry. Our most recent significant transaction was the formation of, and subsequent acquisition of the remaining minority ownership interest in, RF360 Holdings to enable delivery of RFFE modules and RF filters into fully integrated products for mobile devices and IoT applications, among others. See “Notes to Consolidated Financial Statements, Note 9. Acquisitions” in this Annual Report for additional information.

We make investments to provide our integrated circuit customers with chipsets designed on leading-edge technology nodes that combine multiple technologies for use in consumer devices (e.g., smartphones, tablets and laptops), consumer electronics and other products (e.g., access points and routers, data cards and infrastructure equipment). In addition to 3G, 4G and 5G technologies, our chipsets support other wireless and wired connectivity technologies, including Wi-Fi, Bluetooth, Ethernet, location positioning and Powerline communication. Our integrated chipsets often include multiple technologies, including advanced multimode modems, application processors and graphics engines, as well as the tools to connect these diverse technologies. We continue to support Android, Windows and other mobile client software environments in our chipsets.

We develop on our own, and with our partners, innovations that are integrated into our product portfolio to further expand the opportunity for wireless communications and enhance the value of our products and services. These innovations are expected to enable our customers to improve the performance or value of their existing services, offer these services more affordably and introduce revenue-generating broadband data services ahead of their competition.

We have research and development centers in various locations throughout the world that support our global development activities and ongoing efforts to develop and/or advance 4G, 5G and a broad range of other technologies. We continue to use our substantial engineering resources and expertise to develop new technologies, applications and services and make them available to licensees to help grow the communications industry and generate new or expanded licensing opportunities.

We also make investments in opportunities that leverage our existing technical and business expertise to deploy new and expanded product areas, such as RFFE, and enter into adjacent industry segments, such as products for automotive, computing, IoT (including the connected home, smart cities, wearables, voice and music and robotics) and networking, among others.

Sales and Marketing

Sales and marketing activities of our operating segments are discussed under Operating Segments. Other marketing activities include public relations, advertising, digital marketing and social media, participation in technical conferences and trade shows, development of business cases and white papers, competitive analyses, industry intelligence and other marketing programs, such as marketing and/or market development funds with our customers. Our Corporate Marketing department provides company information on our Internet site and through other channels regarding our products, strategies and technology to industry analysts and media.

Competition

Competition faced by our operating segments is discussed under Operating Segments. Competition in the wireless communications industry throughout the world continues to increase at a rapid pace as consumers, businesses and governments realize the potential of wireless communications products and services. We have facilitated competition in the wireless communications industry by licensing our technologies to a large number of manufacturers. Although we have attained a significant position in the traditional cellular industry, many of our current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to use our competitors' integrated circuit products, to utilize their own internally-developed integrated circuit products or sell such products to others, including by selling them together with certain of their other products, or to choose alternative technologies; lower cost structures or a willingness and ability to accept lower prices and lower or negative margins for their products, particularly in China; foreign government support of other technologies or competitors or original equipment manufacturers (OEMs) that sell devices that do not contain our chipsets; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and OEMs in certain geographic regions (such as China); more experience in adjacent industry segments outside traditional cellular industries (such as automotive, computing, IoT and networking); and a more established presence in certain regions. These relationships may affect customers' decisions to purchase products or license technology from us. Accordingly, new competitors or alliances among competitors could emerge and rapidly acquire significant market positions to our detriment.

We expect competition to increase as our current competitors expand their product offerings and introduce new technologies and services in the future and as additional companies compete with our products or services based on 3G, 4G, 5G or other technologies. Although we intend to continue to make substantial investments in developing new products and technologies and improving existing products and technologies to strengthen and/or maintain our competitive position, our competitors may introduce alternative products, services or technologies that threaten our business. It is also possible that the prices we charge for our products and services may continue to decline as competition continues to intensify. See also the Risk Factor entitled "*Our industry is subject to competition in an environment of rapid technological changes. Our success depends in part on our ability to adapt to such changes and compete effectively; and such changes and competition could result in decreased demand for our products or declining average selling prices for our products or those of our customers or licensees.*"

Corporate Responsibility and Sustainability

We strive to better our local and global communities through ethical business practices, socially empowering technology applications, educational and environmental programs and employee diversity and volunteerism.

- *Our Governance.* We aim to demonstrate accountability, transparency, integrity and ethical business practices throughout our operations and interactions with our stakeholders.
- *Our Products.* We strive to meet or exceed industry standards for product responsibility and supplier management.
- *Our Workplace.* We endeavor to provide a safe and healthy work environment where diversity is embraced, innovation is encouraged, and opportunities for training, growth and advancement are available for all employees.
- *Our Community.* We have strategic relationships with a wide range of local organizations and programs that develop and strengthen communities worldwide.
- *Our Commitment to STEM Education.* We aim to promote and improve science, technology, engineering and math (STEM) education at all levels and expand opportunities for underrepresented students in STEM careers.
- *Our Environment.* We aim to expand our operations while minimizing our carbon footprint, conserving water and reducing waste.
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Qualcomm® Wireless Reach™ Initiative. We invest in strategic programs that foster entrepreneurship, aid in public safety, enhance delivery of health care, enrich teaching and learning and improve environmental sustainability through the use of advanced wireless technologies.

Employees

At September 29, 2019, we employed approximately 37,000 full-time, part-time and temporary employees. During fiscal 2019, the number of employees increased by approximately 1,600, primarily due to increases in engineering resources, partially offset by actions taken under our Cost Plan.

Available Information

Our Internet address is www.qualcomm.com. There we make available, free of charge, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and any amendments to those reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). We also make available on our Internet site public financial information for which a report is not required to be filed with or furnished to the SEC. Our SEC reports and other financial information can be accessed through the investor relations section of our Internet site. The information found on our Internet site is not part of this or any other report we file with or furnish to the SEC.

Information about our Executive Officers

Our executive officers (and their ages at September 29, 2019) are as follows:

Steve Mollenkopf, age 50, has served as Chief Executive Officer since March 2014 and as a director since December 2013. He served as Chief Executive Officer-elect and President from December 2013 to March 2014 and as President and Chief Operating Officer from November 2011 to December 2013. In addition, he served as Executive Vice President and Group President from September 2010 to November 2011 and as Executive Vice President and President, Qualcomm CDMA Technologies (QCT) from August 2008 to September 2010. Mr. Mollenkopf joined Qualcomm in 1994 as an engineer and throughout his tenure at Qualcomm has held several other technical and leadership positions. Mr. Mollenkopf served as a member of the board of directors of General Electric Company from November 2016 to April 2018. Mr. Mollenkopf holds a B.S. degree in Electrical Engineering from Virginia Tech and an M.S. degree in Electrical Engineering from the University of Michigan.

Cristiano R. Amon, age 49, has served as President, Qualcomm Incorporated since January 2018. He served as Executive Vice President, Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated (QTI) and President, QCT from November 2015 to January 2018. He served as Executive Vice President, QTI and Co-President, QCT from October 2012 to November 2015, Senior Vice President, Qualcomm Incorporated and Co-President, QCT from June 2012 to October 2012 and as Senior Vice President, QCT Product Management from October 2007 to June 2012. Mr. Amon joined Qualcomm in 1995 as an engineer and throughout his tenure at Qualcomm has held several other technical and leadership positions. Mr. Amon holds a B.S. degree in Electrical Engineering from UNICAMP, the State University of Campinas, Brazil.

Brian T. Modoff, age 60, has served as Executive Vice President, Strategy and Mergers & Acquisitions since October 2015. Prior to joining Qualcomm, Mr. Modoff was a Managing Director in Equity Research at Deutsche Bank Securities Inc., a provider of financial services, from March 1999 to October 2015. Prior to joining Deutsche Bank, Mr. Modoff was a research analyst at several financial institutions from November 1993 to March 1999. Mr. Modoff previously worked in defense electronics, including at Rockwell International in manufacturing management, and for the U.S. Navy as a communications technician. Mr. Modoff holds a B.A. degree in Economics from California State University, Fullerton and a Master of International Management from the Thunderbird School of Global Management.

Akash Palkhiwala, age 44, has served as Executive Vice President and Chief Financial Officer since November 2019. He served as Senior Vice President and Interim Chief Financial Officer from August 2019 to November 2019. He served as Senior Vice President, (QCT) Finance, QTI from December 2015 to August 2019, and Senior Vice President and Treasurer, Qualcomm Incorporated from October 2014 to December 2015. Mr. Palkhiwala served as Vice President, (QCT) Finance, QTI from October 2012 to October 2014 and Vice President, (QCT) Finance from October 2009 to October 2012. He served in various other finance roles since joining the Company in March 2001. Prior to joining Qualcomm, Mr. Palkhiwala was an Analyst at KeyBank. Mr. Palkhiwala has an undergraduate degree in Mechanical Engineering from L.D. College of Engineering in India and an M.B.A from the University of Maryland.

Alexander H. Rogers, age 62, has served as Executive Vice President and President, Qualcomm Technology Licensing (QTL) since October 2016. He served as Senior Vice President and President, QTL from September 2016 to October 2016, Senior Vice President, Deputy General Counsel and General Manager, QTL from March 2016 to September 2016, Senior Vice President and Deputy General Counsel from October 2015 to March 2016 and Senior Vice President and Legal Counsel from April 2007 to October 2015. Prior to transitioning to QTL, Mr. Rogers led Qualcomm's litigation group. Mr. Rogers joined Qualcomm in January 2001 as an attorney. Prior to joining Qualcomm, Mr. Rogers was a partner at the law firm of Gray, Cary, Ware & Friedenrich (now DLA Piper), specializing in intellectual property and commercial litigation. Mr. Rogers holds B.A. and M.A. degrees in English Literature from Georgetown University and a J.D. degree from Georgetown University Law Center.

Donald J. Rosenberg, age 68, has served as Executive Vice President, General Counsel and Corporate Secretary since October 2007. He served as Senior Vice President, General Counsel and Corporate Secretary of Apple Inc. from November

2006 to October 2007. From May 1975 to November 2006, Mr. Rosenberg held numerous positions at IBM Corporation, including Senior Vice President and General Counsel. Mr. Rosenberg has served as a member of the board of directors of NuVasive, Inc. since February 2016 and is presently NuVasive's lead independent director. Mr. Rosenberg holds a B.S. degree in Mathematics from the State University of New York at Stony Brook and a J.D. degree from St. John's University School of Law.

Michelle Sterling, age 52, has served as Executive Vice President, Human Resources since May 2015. She served as Senior Vice President, Human Resources from October 2007 to May 2015. Ms. Sterling joined Qualcomm in 1994 and throughout her tenure at Qualcomm has held several other human resources and leadership positions. Ms. Sterling has served as a member of the board of directors of Digital Turbine, Inc. since June 2019. Ms. Sterling holds a B.S. degree in Business Management from the University of Redlands.

James H. Thompson, age 55, has served as Executive Vice President, Engineering, QTI and Chief Technology Officer since March 2017. He served as Executive Vice President, Engineering, QTI from October 2012 to March 2017 and as Senior Vice President, Engineering, Qualcomm Incorporated from July 1998 to October 2012. Dr. Thompson joined Qualcomm in 1992 as a senior engineer and throughout his tenure at Qualcomm held several other technical and leadership positions. Dr. Thompson holds B.S., M.S. and Ph.D. degrees in Electrical Engineering from the University of Wisconsin.

Item 1A. Risk Factors

You should consider each of the following factors in evaluating our business and our prospects. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also negatively impact our business and results of operations and require significant management time and attention. In that case, the trading price of our common stock could decline. You should also consider the other information set forth in this Annual Report in evaluating our business and our prospects, including but not limited to our financial statements and the related notes, and "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations." References to "and" and "or" should be read to include the other as well as "and/or," as appropriate.

Risks Related to Our Businesses

Our revenues depend on commercial network deployments, expansions and upgrades of CDMA, OFDMA and other communications technologies, including 5G; our customers' and licensees' sales of products and services based on these technologies; and customers' demand for our products and services.

We develop, patent and commercialize technology and products based on CDMA, OFDMA and other communications technologies, which are primarily wireless. We depend on operators of wireless networks and our customers and licensees to adopt and implement the latest generation of these technologies for use in their networks, devices and services. We also depend on our customers and licensees to develop devices and services based on these technologies with value-added features to drive consumer demand for new 3G/4G and 3G/4G/5G multimode devices, as well as 3G, 4G and 5G single-mode devices, and to establish the selling prices for such devices. Further, we depend on the timing of our customers' and licensees' deployments of new devices and services based on these technologies. Increasingly, we also depend on operators of wireless networks, our customers and licensees and other third parties to incorporate these technologies into new device types and into industries and applications beyond traditional cellular communications, such as automotive, computing, IoT (including the connected home, smart cities, wearables, voice and music and robotics) and networking, among others.

We have historically been successful during wireless technology transitions, including 3G and 4G. The next generation of wireless technologies is 5G, which we expect will empower a new era of connected devices and will be utilized not only in handsets but in new device types, industries and applications beyond traditional cellular communications, as described above (see also Part I, Item 1, "Business" for further description of 5G). Initial commercial deployments of 5G networks and devices have begun and will continue into fiscal 2020 and beyond. We believe it is important that we remain a leader in 5G technology development, standardization, intellectual property creation and licensing, and that we develop, commercialize and be a leading supplier of 5G integrated circuit products and services, in order to sustain and grow our business long-term.

Our revenues and growth in revenues could be negatively impacted, our business may be harmed and our substantial investments in these technologies may not provide us an adequate return, if:

- wireless operators and industries beyond traditional cellular communications deploy alternative technologies;
- wireless operators delay next-generation network deployments, expansions or upgrades or delay moving customers to 3G/4G and 3G/4G/5G multimode devices, as well as 4G and 5G single-mode devices;
- LTE, an OFDMA-based wireless technology, is not more widely deployed or further commercial deployment is delayed;
- government regulators delay making sufficient spectrum available for 4G and 5G wireless technologies, including unlicensed spectrum and shared spectrum technologies, thereby delaying or precluding the initial deployment or expanded deployment of these technologies;
- wireless operators delay or do not drive improvements in 4G or 5G, or 3G/4G or 3G/4G/5G multimode network performance and capacity;
- our customers' and licensees' revenues and sales of products, particularly premium-tier products, and services using these technologies, and average selling prices (ASPs) of such products, decline, do not grow or do not grow meaningfully due to, for example, the maturity of smartphone penetration in developed regions;
- our intellectual property and technical leadership included in the continued 5G standardization effort is different than in 3G and 4G standards;
- the continued standardization or commercial deployment of 5G technologies is delayed;
- we are unable to drive the adoption of our products and services into networks and devices, including devices beyond traditional cellular applications, based on CDMA, OFDMA and other communications technologies; or
- consumers' rates of replacement of smartphones and other computing devices decline, do not grow or do not grow meaningfully.

Our industry is subject to competition in an environment of rapid technological changes. Our success depends in part on our ability to adapt to such changes and compete effectively; and such changes and competition could result in decreased demand for our products or declining average selling prices for our products or those of our customers or licensees.

Our products, services and technologies face significant competition. We expect competition to increase as our current competitors expand their product offerings or reduce the prices of their products as part of a strategy to maintain existing business and customers or attract new business and customers, as new opportunities develop and as new competitors enter the industry. Competition in wireless communications is affected by various factors that include, among others: device manufacturer concentrations; vertical integration; growth in demand, consumption and competition in certain geographic regions; government intervention or support of national industries or competitors; evolving industry standards and business models; evolving methods of transmission of voice and data communications; increasing data traffic and densification of wireless networks; convergence and aggregation of connectivity technologies (including Wi-Fi and LTE) in both devices and access points; consolidation of wireless technologies and infrastructure at the network edge; networking and connectivity trends (including cloud services); use of licensed, shared and unlicensed spectrum; the evolving nature of computing (including demand for always on, always connected capabilities); the speed of technological change (including the transition to smaller geometry process technologies); value-added features that drive selling prices and consumer demand for new 3G/4G and 3G/4G/5G multimode devices, as well as 3G, 4G and 5G single-mode devices; turnkey, integrated products that incorporate hardware, software, user interface, applications and reference designs; scalability; and the ability of the system technology to meet customers' immediate and future network requirements. We anticipate that additional competitors will introduce products as a result of growth opportunities in wireless communications, the trend toward global expansion by foreign and domestic competitors, technological and public policy changes and relatively low barriers to entry in certain segments of the industry. Additionally, the semiconductor industry has experienced and may continue to experience consolidation, which could result in significant changes to the competitive landscape.

We expect that our future success will depend on, among other factors, our ability to:

- differentiate our integrated circuit products with innovative technologies across multiple products and features (e.g., modem, RFFE, graphics and other processors, camera and connectivity) and with smaller geometry process technologies that drive both performance and lower power consumption;
- develop and offer integrated circuit products at competitive cost and price points to effectively cover both emerging and developed geographic regions and all device tiers;
- drive the adoption of our integrated circuit products into the most popular device models and across a broad spectrum of devices, such as smartphones, tablets, laptops and other computing devices, automobiles, wearables, voice and music and other connected devices and infrastructure products;

- maintain or accelerate demand for our integrated circuit products at the premium device tier, while also driving the adoption of our 5G products into high, mid- and low-tier devices across all regions;
- continue to be a leader in 4G and 5G technology evolution and continue to innovate and introduce 4G and 5G turnkey, integrated products and services that differentiate us from our competition;
- remain a leader in 5G technology development, standardization, intellectual property creation and licensing, and develop, commercialize and be a leading supplier of 5G integrated circuit products and services;
- increase or accelerate demand for our semiconductor component products, including RFFE, and our wireless connectivity products, including networking products for consumers, carriers and enterprise equipment and connected devices;
- become a leading supplier of RFFE products, which are designed to address cellular radio frequency band fragmentation while improving radio frequency performance and assist original equipment manufacturers in developing multiband, multimode mobile devices;
- create standalone value and contribute to the success of our existing businesses through acquisitions, joint ventures and other transactions, and by developing customer, licensee, vendor, distributor and other channel relationships in new industry segments and with disruptive technologies, products and services, such as products for automotive, computing, IoT (including the connected home, smart cities, wearables, voice and music and robotics) and networking, among others;
- identify potential acquisition targets that will grow or sustain our business or address strategic needs, reach agreement on terms acceptable to us, close the transactions and effectively integrate these new businesses, products and technologies;
- be a leader serving original equipment manufacturers (OEMs), high level operating systems (HLOS) providers, operators, cloud providers and other industry participants as competitors, new industry entrants and other factors continue to affect the industry landscape;
- be a preferred partner and sustain preferred relationships providing integrated circuit products that support multiple operating system and infrastructure platforms to industry participants that effectively commercialize new devices using these platforms; and
- continue to develop brand recognition to effectively compete against better known companies in computing and other consumer driven segments and to deepen our presence in significant emerging regions and China.

We compete with many different semiconductor companies, ranging from multinational companies with integrated research and development, manufacturing, sales and marketing organizations across a broad spectrum of product lines, to companies that are focused on a single application market segment or standard product, including those that produce products for automotive, computing, IoT and networking applications. Most of these competitors compete with us with respect to some, but not all, of our businesses. Companies that design integrated circuits based on CDMA, OFDMA, Wi-Fi or their derivatives are generally competitors or potential competitors. Examples (some of which are strategic partners of ours in other areas) include Broadcom, Cirrus Logic, Cypress Semiconductor, HiSilicon, Intel, Marvell, Maxim, MediaTek, Microchip Technology, Murata, Nordic Semiconductor, Nvidia, NXP Semiconductors, Qorvo, Realtek Semiconductor, Renesas, Samsung, Sequans Communications, Skyworks and Spreadtrum Communications (which is controlled by Tsinghua Unigroup). Some of these current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to use our competitors’ integrated circuit products, to utilize their own internally-developed integrated circuit products or sell such products to others, or to choose alternative technologies; lower cost structures or a willingness and ability to accept lower prices or lower or negative margins for their products, particularly in China; foreign government support of other technologies, competitors or OEMs that sell devices that do not contain our chipsets; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and OEMs in certain geographic regions (such as China); more experience in adjacent industry segments outside traditional cellular industries (such as automotive, computing, IoT and networking); and a more established presence in certain regions.

In particular, certain of our largest integrated circuit customers develop their own integrated circuit products, which they have in the past utilized, and currently utilize, in certain of their devices and may in the future choose to utilize in certain (or all) of their devices, rather than our products (and they may sell their integrated circuit products to third parties, discretely or together with certain of their other products, in competition with us). Also, Apple, which has historically been one of our largest customers, now utilizes products of one of our competitors in many of their devices rather than our products and is solely utilizing one of our competitor's products in its most recent smartphone launch. Apple may continue to use our competitors' products in one or more of its future devices and may develop and utilize its own modem products, rather than our products, in one or more of its future devices.

Further, certain of our competitors develop and sell multiple components (including integrated circuit products) for use in devices and sell those components together to device manufacturers. Our competitors' sales of multiple components put us (and our discrete integrated circuit products) at a competitive disadvantage. Certain of our competitors also develop and sell infrastructure equipment for wireless networks and can optimize their integrated circuit products to perform on such networks to a degree that we are not able to, which again puts us at a competitive disadvantage.

Competition in any or all product tiers may result in the loss of business or customers, which would negatively impact our revenues, results of operations and cash flows. Such competition may also reduce average selling prices for our chipset products or the products of our customers and licensees. Certain of these dynamics are particularly pronounced in emerging regions and China where competitors may have lower cost structures or may have a willingness and ability to accept lower prices or lower or negative margins on their products (particularly in China). Reductions in the average selling prices of our chipset products, without a corresponding increase in volumes, would negatively impact our revenues, and without corresponding decreases in average unit costs, would negatively impact our margins. In addition, reductions in the average selling prices of our licensees' products, unless offset by an increase in volumes, would generally decrease total royalties payable to us, negatively impacting our licensing revenues.

We derive a significant portion of our revenues from a small number of customers and licensees, which increasingly includes a small number of Chinese OEMs. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected.

Our QCT segment derives a significant portion of its revenues from a small number of customers, and we expect this trend to continue in the foreseeable future. Our industry is experiencing and may continue to experience concentration of device share among a few companies, particularly at the premium tier, contributing to this trend. Chinese OEMs continue to grow their device share in China and are increasing their device share in regions outside of China, and we derive a significant and increasing portion of our revenues from a small number of these OEMs. In addition, certain of our largest integrated circuit customers develop their own integrated circuit products, which they have in the past utilized, and currently utilize, in certain of their devices and may in the future choose to utilize in certain (or all) of their devices, rather than our products (and they may sell their integrated circuit products to third parties, discretely or together with certain of their other products, in competition with us). Also, Apple, which has historically been one of our largest customers, utilizes products of one of our competitors in many of their devices rather than our products and is solely utilizing one of our competitor's products in its most recent smartphone launch. In April 2019, we entered into a new multi-year chipset supply agreement with Apple. We do not expect to begin recording revenues under this agreement until the second half of fiscal 2020. However, Apple may continue to use our competitors' products in one or more of its future devices and may develop and utilize its own modem products, rather than our products, in one or more of its future devices.

Similarly, certain of our Chinese OEM customers have developed and others may in the future develop their own integrated circuit products and use such integrated circuit products, or other integrated circuit products, in their devices rather than our integrated circuit products, whether due to pressure from the Chinese government as part of its broader economic policies, the OEMs' concerns over losing access to our integrated circuit products as a result of U.S./Chinese trade tensions, or otherwise.

Further, political actions, including trade and/or national security protection policies, or other actions by governments, have in the past, currently are and could in the future limit or prevent us from transacting business with certain of our customers, or limit or prevent certain of our customers from transacting business with us.

Finally, we spend a significant amount of engineering and development time, funds and resources in understanding our key customers' feedback and/or specifications and attempt to incorporate such input into our product launches and technologies. These efforts may not require or result in purchase commitments from such customers or we may have lower purchases from such customers than expected, and consequently, we may not achieve the anticipated revenues from these efforts, or these efforts may result in non-recoverable costs.

The loss of any one of our significant customers, a reduction in the purchases of our products by such customers or the cancelation of significant purchases by any of these customers, whether due to the use of their own integrated circuit products or our competitors' integrated circuit products, government restrictions or otherwise, would reduce our revenues and could harm our ability to achieve or sustain expected results of operations, and a delay of significant purchases, even if only temporary, would reduce our revenues in the period of the delay. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development. Further, the concentration of device share among a few companies, and the corresponding purchasing power of these companies, may result in lower prices for our products which, if not accompanied by a sufficient increase in the volume of purchases of our products, could have an adverse effect on our revenues and margins. In addition, the timing and size of purchases by our significant customers may be impacted by the timing of such customers' new or next generation product introductions, over which we have no control, and the timing and success of such introductions may cause our revenues and results of operations to fluctuate. Accordingly, if current industry dynamics continue, our QCT segment's revenues will continue to depend largely upon, and be impacted by, future purchases, and the timing and size of any such future purchases, by these significant customers.

Further, to the extent Apple purchases our modem products, it purchases our Mobile Data Modem (MDM) products, which do not include our integrated application processor technology, and which have lower revenue and margin contributions than our combined modem and application processor products. To the extent Apple takes device share from our customers who purchase our integrated modem and application processor products, our revenues and margins may be negatively impacted.

Further, companies that develop HLOS for devices, including leading technology companies, sell their own devices. If we fail to effectively partner or continue partnering with these companies, or with their partners or customers, they may decide not to purchase (either directly or through their contract manufacturers), or to reduce or discontinue their purchases of, our integrated circuit products.

In addition, there has been and continues to be litigation among certain of our customers and other industry participants, and the potential outcomes of such litigation, including but not limited to injunctions against devices that incorporate our products or intellectual property, and rulings on certain patent law or patent licensing issues that create new legal precedent, could impact our business, particularly if such action impacts one of our larger customers.

Although we have more than 300 licensees, our QTL segment derives a significant portion of its revenues from a limited number of licensees, which increasingly includes a small number of Chinese OEMs. In the event that one or more of our significant licensees fail to meet their reporting and payment obligations, or we are unable to renew or modify one or more of such license agreements under similar terms, our revenues, results of operations and cash flows would be adversely impacted. Moreover, the future growth and success of our core licensing business will depend in part on the ability of our licensees to develop, introduce and deliver high-volume products that achieve and sustain customer acceptance. We have no control over the product development, sales efforts or pricing of products by our licensees, and our licensees might not be successful. Reductions in sales of our licensees' products, or reductions in the average selling prices of wireless devices sold by our licensees without a sufficient increase in the volumes of such devices sold, would generally have an adverse effect on our licensing revenues. Such adverse impact may be mitigated by the per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets, laptops and smartwatches.

We derive a significant portion of our revenues from the premium-tier device segment. If sales of premium-tier devices decrease, or sales of our premium-tier integrated circuit products decrease, our results of operations could be negatively affected.

We derive a significant portion of our revenues from the premium-tier device segment, and we expect this trend to continue in the foreseeable future. We have experienced, and expect to continue to experience, slowing growth in the premium-tier device segment due to, among other factors, lengthening replacement cycles in developed regions, where premium-tier smartphones are common; increasing consumer demand in emerging regions and China where premium-tier smartphones are less common and replacement cycles are on average longer than in developed regions and are continuing to lengthen; and a maturing premium-tier smartphone industry in which demand is increasingly driven by new product launches and innovation cycles.

In addition, as discussed in the prior risk factor, our industry is experiencing concentration of device share at the premium tier among a few companies, which gives them significant leverage. Further, certain of those companies have in the past utilized, currently utilize and may in the future utilize their own internally-developed integrated circuit products or our competitors' integrated circuit products rather than our products in all or a portion of their devices. These dynamics may result in reduced sales of or lower prices for our premium-tier integrated circuit products.

A reduction in sales of premium-tier devices, a reduction in sales of our premium-tier integrated circuit products (which have a higher revenue and margin contribution than our lower-tier integrated circuit products) or a shift in share away from OEMs that utilize our products to OEMs that do not utilize our products, would reduce our revenues and margins and may harm our ability to achieve or sustain expected financial results. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development.

Efforts by some communications equipment manufacturers or their customers to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and

financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business.

From time to time, companies initiate various strategies to attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property. These strategies have included: (i) litigation, often alleging infringement of patents held by such companies, patent misuse, patent exhaustion, patent invalidity or unenforceability of our patents or licenses, that we do not license our patents on fair, reasonable and nondiscriminatory (FRAND) terms, or some form of unfair competition or competition law violation; (ii) taking positions contrary to our understanding (and/or the plain language) of their contracts with us; (iii) appeals to governmental authorities; (iv) collective action, including working with wireless operators, standards bodies, other like-minded companies and organizations, on both formal and informal bases, to adopt intellectual property policies and practices that could have the effect of limiting returns on intellectual property innovations; (v) lobbying governmental regulators and elected officials for the purpose of seeking the reduction of royalty rates or the base on which royalties are calculated, seeking to impose some form of compulsory licensing or weakening a patent holder's ability to enforce its rights or obtain a fair return for such rights; and (vi) various attempts by licensees to shift their royalty obligation to their suppliers that results in lowering the wholesale (i.e., licensee's) selling price on which the royalty is calculated.

In addition, certain licensees have disputed, underreported, underpaid, not reported or not paid royalties owed to us under their license agreements or reported to us in a manner that is not in compliance with their contractual obligations, and certain companies have yet to enter into or have delayed entering into or renewing license agreements with us for their use of our intellectual property. Further, certain licensees and companies are currently engaged in such behavior and they or others may engage in such behavior in the future. The fact that one or more licensees dispute, underreport, underpay, do not report or do not pay royalties owed to us may encourage other licensees to take similar actions and may encourage other licensees or unlicensed companies to delay entering into, or not enter into, new license agreements. Further, to the extent such licensees and companies increase their device share, the negative impact of their underreporting, underpayment, non-payment or non-reporting on our business, revenues, results of operations, financial condition and cash flows will be exacerbated.

We have been in the past and are currently subject to various litigation and governmental investigations and proceedings, including the lawsuit filed against us by the United States Federal Trade Commission (FTC). Certain of these matters are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We may become subject to other litigation or governmental investigations or proceedings in the future. Additionally, certain of our direct and indirect customers and licensees have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, financial condition and cash flows. See the Risk Factors below entitled "*Our business, particularly our licensing business, may suffer as a result of adverse rulings in government investigations or proceedings*" and "*Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations*."

In addition, in connection with our participation in SDOs, we, like other patent owners, generally have made contractual commitments to such organizations to license those of our patents that would necessarily be infringed by standard-compliant products as set forth in those commitments. Some manufacturers and users of standard-compliant products advance interpretations of these commitments that are adverse to our licensing business, including interpretations that would limit the amount of royalties that we could collect on the licensing of our standard-essential patent portfolio.

Further, some companies or entities have proposed significant changes to existing intellectual property policies for implementation by SDOs and other industry organizations with the goal of significantly devaluing standard-essential patents. For example, some have put forth proposals which would require a maximum aggregate intellectual property royalty rate for the use of all standard-essential patents owned by all of the member companies to be applied to the selling price of any product implementing the relevant standard. They have further proposed that such maximum aggregate royalty rate be apportioned to each member company with standard-essential patents based upon the number of standard-essential patents held by such company. Others have proposed that injunctions should not be an available remedy for infringement of standard-essential patents and have made proposals that could severely limit damage awards and other remedies by courts for patent infringement (e.g., by severely limiting the base upon which the royalty rate may be applied). A number of these strategies are purportedly based on interpretations of the policies of certain SDOs concerning the licensing of patents that are or may be essential to industry standards and on our (or other companies') alleged failure to abide by these policies. Some SDOs, courts and governmental agencies have adopted and may in the future adopt some or all of these interpretations or proposals in a manner adverse to our interests, including in litigation to which we may not be a party.

We expect that such proposals, interpretations and strategies will continue in the future, and if successful, our business model would be harmed, either by limiting or eliminating our ability to collect royalties (or by reducing the royalties we can collect) on all or a portion of our standard-essential patent portfolio, limiting our return on investment with respect to new technologies, limiting our ability to seek injunctions against infringers of our standard-essential patents, constraining our ability to make licensing commitments when submitting our technology for inclusion in future standards (which could make our technology less likely to be included in such standards) or forcing us to work outside of SDOs or other industry groups to promote our new technologies, and our revenues, results of operations and cash flows could be negatively impacted. In addition, the legal and other costs associated with asserting or defending our positions have been and continue to be significant. We assume that such challenges, regardless of their merits, will continue into the foreseeable future and will require the investment of substantial management time and financial resources.

Our business, particularly our licensing business, may suffer as a result of adverse rulings in government investigations or proceedings.

We have been in the past and are currently subject to various governmental investigations and proceedings, particularly with respect to our licensing business, including the lawsuit filed against us by the FTC. Certain of these matters are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." Key allegations or findings in those matters include, among others, that we violate FRAND licensing commitments by refusing to grant licenses to chipset makers, that our royalty rates are too high, that the base on which our royalties are calculated should be something less than the wholesale (i.e., licensee's) selling price of the applicable device (minus certain permitted deductions), that we unlawfully require customers to execute a patent license before we sell them cellular modem chipsets, that we have entered into exclusive agreements with chipset customers that foreclose competition, and that we violate antitrust laws, engage in anticompetitive conduct and unfair methods of competition. We may become subject to other litigation or governmental investigations or proceedings in the future.

Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, financial condition and cash flows. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others, the loss of our ability to enforce one or more of our patents; injunctions; monetary damages or fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed OEMs or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. If some or all of our license agreements are declared invalid or unenforceable and/or we are required to renegotiate these license agreements, we may not receive, or may not be able to recognize, some or any licensing or royalty revenues under the impacted license agreements unless and until we enter into new license agreements; and even licensees whose license agreements are not impacted may demand to renegotiate their agreements or invoke the dispute resolution provision in their agreements, and we may not be able to recognize some or any licensing or royalty revenues under such agreements. The renegotiation of license agreements could lead to arbitration or litigation to resolve the licensing terms (which could be less favorable to us than existing terms), each of which could take months or possibly years. Licensees may underreport, underpay, not report or not pay royalties owed to us pending the conclusion of such negotiations, arbitration or litigation. In addition, we may be sued for alleged overpayments of past royalties paid to us, including private antitrust actions seeking treble damages under U.S. antitrust laws. Further, if our appeal in the FTC lawsuit is unsuccessful, it could have a material adverse effect on our business. Any such event could result in a materially negative impact on our financial condition, in which case we would have to significantly cut costs and other uses of cash, including in research and development, significantly impairing our ability to maintain product and technology leadership and invest in next generation technologies such as 5G. Further, depending on the breadth and severity of the circumstances above, we may have to reduce or eliminate our capital return programs, and our ability to timely pay our indebtedness may be impacted. If these events occur, our financial outlook and stock price could decline, possibly significantly. Further, a governmental body in a particular country or region may successfully assert and impose remedies with effects that extend beyond the borders of that country or region.

These challenges have required, and we expect that they will continue to require, the investment of significant management time and attention and have resulted, and we expect that they will continue to result, in increased legal costs until the respective matters are resolved.

Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations.

As described in the Risk Factor above entitled "*Our business, particularly our licensing business, may suffer as a result of adverse rulings in government investigations or proceedings*," we have been in the past and are currently subject to various governmental investigations and proceedings and private legal proceedings challenging our patent licensing and chipset sales practices, including the lawsuit filed against us by the FTC. Certain of these matters are described more fully in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.” We believe that one intent of these investigations and legal proceedings is to reduce the amount of royalties that licensees are required to pay to us for their use of our intellectual property. We may become subject to other litigation or governmental investigations or proceedings in the future.

We historically licensed our cellular standard-essential patents together with our other patents that may be useful to licensed products because licensees desired to obtain the commercial benefits of receiving such broad patent rights from us. However, we also licensed only our cellular standard-essential patents to certain licensees who requested such licenses. Since 2015, our standard practice in China is to offer licenses to our 3G and 4G (and now 5G) cellular standard-essential Chinese patents for devices sold for use in China separately from our other patents. In addition, we also offer licenses to only our cellular standard-essential patents (including 3G, 4G and 5G) for both single-mode and multimode devices on a worldwide basis, and since 2018, an increasing number of new and existing licensees have elected to enter into worldwide license agreements covering only our cellular standard-essential patents. Going forward, we continue to anticipate that a significant portion of our licensing revenues will be derived from licensees that have entered into license agreements covering only our cellular standard-essential patents. Our royalty rates for licenses to only our cellular standard-essential patents are lower than our royalty rates for licenses to substantially all of our patent portfolio. If more licensees choose a license to only our cellular standard-essential patents instead of a portfolio license than has historically been the case, our licensing revenues and earnings would be negatively impacted unless we were able to license our other patents at rates that offset all or a portion of any difference between the royalties previously received for licenses of substantially all of our patent portfolio as compared to licenses of only our cellular standard-essential patents or there was a sufficient increase in the overall volume of sales of devices upon which royalties are paid.

If we were required to grant patent licenses to chipset manufacturers (which could lead to implementing a more complex, multi-level licensing structure in which we license certain portions of our patent portfolio to chipset manufacturers and other portions to device manufacturers), we would incur additional transaction costs, which may be significant, and we could incur delays in recognizing revenues until license negotiations were completed. In addition, our licensing revenues and earnings would be negatively impacted if we were not able to obtain, in the aggregate, equivalent revenues under such a multi-level licensing structure.

If we were required to reduce the royalty rates, we charge under our patent license agreements, our revenues, earnings and cash flows would be negatively impacted absent a sufficient increase in the volume of sales of devices upon which royalties are paid. Similarly, if we were required to reduce the base on which our royalties are calculated, our revenues, results of operations and cash flows would be negatively impacted unless there was a sufficient increase in the volume of sales of devices upon which royalties are paid or we were able to increase our royalty rates to offset the decrease in revenues resulting from such lower royalty base (assuming the absolute royalty dollars were below any relevant royalty caps).

If we were required to sell chipsets to OEMs that do not have a license to our patents, our licensing program could be negatively impacted by patent exhaustion claims raised by such unlicensed OEMs (i.e., claims that our sale of chipsets to such OEMs forecloses us from asserting any patents substantially embodied by the chipsets against such OEMs). Such sales would provide OEMs with a defense in the event we asserted our patents against them to obtain licensing revenue for those patents. This would have a material adverse effect on our licensing program and our results of operations, financial condition and cash flows.

To the extent that we were required to implement any of these new licensing and/or business practices, including by modifying or renegotiating our existing license agreements or pursuing other commercial arrangements, we would incur additional transaction costs, which may be significant, and we could incur delays in recognizing revenues until license negotiations were completed. The impact of any such changes to our licensing practices could vary widely and by jurisdiction, depending on the specific outcomes and the geographic scope of such outcomes. In addition, if we were required to make modifications to our licensing practices in one jurisdiction, licensees or governmental agencies in other jurisdictions may attempt to obtain similar outcomes for themselves or for such other jurisdictions, as applicable.

Finally, if our appeal in the FTC lawsuit is unsuccessful, it could have a material adverse effect on our business.

The enforcement and protection of our intellectual property rights may be expensive, could fail to prevent misappropriation or unauthorized use of our intellectual property rights, could result in the loss of our ability to enforce one or more patents, and could be adversely affected by changes in patent laws, by laws in certain foreign jurisdictions that may not effectively protect our intellectual property rights and by ineffective enforcement of laws in such jurisdictions.

We rely primarily on patent, copyright, trademark and trade secret laws, as well as nondisclosure and confidentiality agreements, international treaties and other methods, to protect our proprietary information, technologies and processes, including our patent portfolio. Policing unauthorized use of our products, technologies and proprietary information is difficult and time consuming. The steps we have taken have not always prevented, and we cannot be certain the steps we will take in the future will prevent, the misappropriation or unauthorized use of our proprietary information and technologies, particularly in foreign countries where the laws may not protect our proprietary intellectual property rights as fully or as readily as U.S. laws or where the enforcement of such laws may be lacking or ineffective.

Some industry participants who have a vested interest in devaluing patents in general, or standard-essential patents in particular, have mounted attacks on certain patent systems, increasing the likelihood of changes to established patent laws. In the United States, there is continued discussion regarding potential patent law changes and current and potential future litigation regarding patents, the outcomes of which could be detrimental to our licensing business. The laws in certain foreign countries in which our products are or may be manufactured or sold, including certain countries in Asia, may not protect our intellectual property rights to the same extent as the laws in the United States. We expect that the European Union (EU) will adopt a unitary patent system in the next few years that may broadly impact that region's patent regime. We cannot predict with certainty the long-term effects of any potential changes. In addition, we cannot be certain that the laws and policies of any country or the practices of any standards bodies, foreign or domestic, with respect to intellectual property enforcement or licensing or the adoption of standards, will not be changed in the future in a way detrimental to our licensing program or to the sale or use of our products or technologies.

We have had, currently have, and may in the future have, difficulty in certain circumstances in protecting or enforcing our intellectual property rights and contracts, including collecting royalties for use of our patent portfolio due to, among others: refusal by certain licensees to report and pay all or a portion of the royalties they owe to us; policies of foreign governments; challenges to our licensing practices under competition laws; adoption of mandatory licensing provisions by foreign jurisdictions; failure of foreign courts to recognize and enforce judgments of contract breach and damages issued by courts in the United States; and challenges before competition agencies to our licensing business and the pricing and integration of additional features and functionality into our chipset products. Certain licensees have disputed, underreported, underpaid, not reported or not paid royalties owed to us under their license agreements with us or reported to us in a manner that is not in compliance with their contractual obligations, and certain companies have yet to enter into or have delayed entering into or renewing license agreements for their use of our intellectual property. Further, certain licensees and companies are currently engaged in such behavior and they or others may engage in such behavior in the future. The fact that one or more licensees dispute, underreport, underpay, do not report or do not pay royalties owed to us may encourage other licensees to take similar actions and may encourage other licensees or unlicensed companies to delay entering into, or not enter into, new license agreements. Additionally, although our license agreements provide us with the right to audit the books and records of licensees, audits can be expensive, time consuming, incomplete and subject to dispute. Further, certain licensees may not comply with the obligation to provide full access to their books and records. To the extent we do not aggressively enforce our rights under our license agreements, licensees may not comply with their existing license agreements, and to the extent we do not aggressively pursue unlicensed companies to enter into license agreements with us for their use of our intellectual property, other unlicensed companies may not enter into license agreements. Similarly, we provide access to certain of our intellectual property and proprietary and confidential business information to our direct and indirect customers and licensees, who have in the past and may in the future wrongfully use such intellectual property and information or wrongfully disclose such intellectual property and information to third parties, including our competitors.

We have engaged in litigation and arbitration in the past and may need to further litigate or arbitrate in the future to enforce our contract and intellectual property rights, protect our trade secrets or determine the validity and scope of proprietary rights of others. As a result of any such litigation or arbitration, we could lose our ability to enforce one or more patents, portions of our license agreements could be determined to be invalid or unenforceable (which may in turn result in other licensees either not complying with their existing license agreements or initiating litigation), license terms (including but not limited to royalty rates for the use of our intellectual property) could be imposed that are less favorable to us than existing terms, and we could incur substantial costs. Any action we take to enforce our contract or intellectual property rights could be costly and could absorb significant management time and attention, which, in turn, could negatively impact our results of operations and cash flows. Further, even a positive resolution to our enforcement efforts may take time to conclude, which may reduce our revenues and cash resources available for other purposes, such as research and development, in the periods prior to conclusion.

Our growth increasingly depends on our ability to extend our technologies, products and services into new and expanded product areas, such as RFFE, and adjacent industry segments and applications outside of traditional cellular industries, such as automotive, computing, IoT and networking, among others. Our research, development and other investments in these new and expanded product areas, industry segments and applications, and related technologies, products and services, as well as in our existing technologies, products and services and

new technologies, such as 5G, may not generate operating income or contribute to future results of operations that meet our expectations.

Our industry is subject to rapid technological change, evolving industry standards and frequent new product introductions, and we must make substantial research, development and other investments, such as acquisitions, in new products, services and technologies to compete successfully. Technological innovations generally require significant research and development efforts before they are commercially viable. While we continue to invest significant resources toward advancements primarily in support of 4G- and 5G-based technologies, we also invest in new and expanded product areas, and adjacent industry segments and applications, by leveraging our existing technical and business expertise and through acquisitions.

In particular, our future growth significantly depends on new and expanded product areas, such as RFFE, and adjacent industry segments and applications outside of traditional cellular industries, such as automotive, computing, IoT (including the connected home, smart cities, wearables, voice and music and robotics) and networking, among others; our ability to develop leading and cost-effective technologies, products and services for new and expanded product areas, adjacent industry segments and applications; and third parties incorporating our technologies, products and services into devices used in these product areas, industry segments and applications. Accordingly, we intend to continue to make substantial investments in these new and expanded product areas and adjacent industry segments and applications, and in developing new products, services and technologies for these product areas, industry segments and applications.

Our growth also depends significantly on our ability to develop and patent 5G technologies, and to develop and commercialize products using 5G technologies.

However, our research, development and other investments in these new and expanded product areas and adjacent industry segments and applications, and corresponding technologies, products and services, as well as in our existing, technologies, products and services and new technologies, such as 5G, use of licensed, shared and unlicensed spectrum and convergence of cellular and Wi-Fi, may not succeed due to, among other reasons: we may not be issued patents on the technologies we develop; the technologies we develop may not be incorporated into relevant standards; new and expanded product areas and adjacent industry segments, applications and consumer demand may not develop or grow as anticipated; our strategies or the strategies of our customers, licensees or partners may not be successful; improvements in alternate technologies in ways that reduce the advantages we anticipate from our investments; competitors' technologies, products or services being more cost effective, having more capabilities or fewer limitations or being brought to market faster than our new technologies, products and services; we may not be able to develop, or our competitors may have more established and/or stronger, customer, vendor, distributor or other channel relationships; and competitors having longer operating histories in industry segments that are new to us. We may also underestimate the costs of or overestimate the future revenues or margins that could result from these investments, and these investments may not, or may take many years to, generate material returns.

Further, the automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in a significant barrier to entry and increased costs.

If our new technologies, products and services are not successful, or are not successful in the time frame we anticipate, we may incur significant costs and asset impairments, our business may not grow meaningfully, our revenues and margins may be negatively impacted, and our reputation may be harmed.

There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model, environmental compliance and liability, exposure to natural disasters, timely supply of equipment and materials, and various manufacturing issues.

While our QCT segment has historically utilized a fabless production model (which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made), we own and operate various facilities that manufacture our RFFE modules and RF filter acoustic products. Manufacturing facilities are characterized by a higher portion of fixed costs relative to a fabless model. We may be faced with a decline in the utilization rates of our manufacturing facilities due to decreases in demand for our products, including in less favorable industry environments. During such periods, our manufacturing facilities could operate at lower capacity levels, while the fixed costs associated with full capacity continue to be incurred, resulting in lower gross profit.

We are subject to many environmental, health and safety laws and regulations in each jurisdiction in which we operate our manufacturing facilities, which govern, among other things, emissions of pollutants into the air, wastewater discharges, the use and handling of hazardous substances, waste disposal, the investigation and remediation of soil and ground water contamination and the health and safety of our employees. We are also required to obtain and maintain environmental permits from governmental authorities for certain of our operations. While we continue to take measures to comply, we cannot make assurances that we will be at all times in compliance with such laws, regulations and permits. Certain environmental laws impose strict, and in certain circumstances, joint and several, liability on current or previous owners or operators of real property for the cost of investigation, removal or remediation of hazardous substances. Certain of these laws also assess liability on persons who arrange for hazardous substances to be sent to disposal or treatment facilities when such facilities are found to be contaminated. In addition, we could also be held liable for consequences arising out of human exposure to hazardous substances or other environmental damage.

We have manufacturing facilities in Asia and Europe. If tsunamis, flooding, earthquakes, volcanic eruptions or other natural disasters, or geopolitical conflicts, were to damage, destroy or disrupt our manufacturing facilities, it could disrupt our operations, delay new production and shipments of inventory and result in costly repairs, replacements or other costs. In addition, natural disasters or geopolitical conflicts may result in disruptions in transportation, distribution channels and supply chains, and significant increases in the prices of raw materials.

Our manufacturing operations depend on securing raw materials and other supplies in adequate quality and quantity in a timely manner from multiple suppliers, and in some cases, we rely on a limited number of suppliers, particularly in Asia. Accordingly, there may be cases where supplies of raw materials and other products are interrupted by disaster, accident or some other event at a supplier, supply is suspended due to quality or other issues, or there is a shortage of supply due to a rapid increase in demand, which could impact production and prevent us from supplying products to our customers. If the supply-demand balance is disrupted, it may considerably increase costs of manufacturing due to increased prices we pay for raw materials. From time to time, suppliers may extend lead times, limit the amounts supplied to us or increase prices due to capacity constraints or other factors. Additionally, supply and costs of raw materials may be negatively impacted by trade and/or national security protection policies, such as tariffs, or actions by governments that limit or prevent us from transacting business with certain companies or that limit or prevent certain companies from transacting business with us, or escalating trade tensions, particularly with countries in Asia. Further, it may be difficult or impossible to substitute one piece of equipment for another or replace one type of material with another. A failure by our suppliers to deliver our requirements could result in disruptions to our manufacturing operations.

Our manufacturing processes are highly complex, require advanced and costly equipment and must be continuously modified to improve yields and performance. Difficulties in the production process can reduce yields or interrupt production, and as a result, we may not be able to deliver products or do so in a timely, cost-effective or competitive manner. Further, to remain competitive and meet customer demand, we may be required to improve our facilities and process technologies and carry out extensive research and development, each of which may require investment of significant amounts of capital and may have a material adverse effect on our results of operations, financial condition and cash flows.

Finally, we typically begin manufacturing our products using our or our customers' forecasts of customer demand, which are based on a number of assumptions and estimates and are generally not covered by purchase commitments. As a result, we incur inventory and manufacturing costs in advance of anticipated sales, which sales ultimately may not materialize or may be lower than expected. If we or our customer overestimate customer demand that is not under a binding commitment from our customer, we may experience higher inventory carrying and operating costs and/or increased excess or obsolete inventory, which would negatively impact our results of operations.

The continued and future success of our licensing programs requires us to continue to evolve our patent portfolio, and our licensing programs may be impacted by the proliferation of devices in new industry segments such as automotive, computing, IoT and networking, as well as the need to renew or renegotiate license agreements that are expiring or to cover additional future patents.

We own a very strong portfolio of issued and pending patents related to 3G, 4G, 5G and other technologies. It is critical that we continue to evolve our patent portfolio, particularly in 5G. If we do not maintain a strong portfolio that is applicable to current and future standards, products and services, particularly 5G, our future licensing revenues could be negatively impacted.

In addition, new connectivity and other services are emerging that rely on devices that may or may not be used on traditional cellular networks, such as devices used in the automotive, computing, IoT and networking industry segments. Standards, even de facto standards, that develop as these technologies mature, in particular those that do not include a base level of interoperability, may impact our ability to obtain royalties at all or that are equivalent to those that we receive for products used in cellular communications. Although we believe that our patented technologies are essential and useful to the commercialization of such services, any royalties we receive may be lower than those we receive from our current licensing program.

Further, the licenses granted to and from us under a number of our license agreements include only patents that are either filed or issued prior to a certain date. As a result, there are agreements with some licensees where later patents are not licensed by or to us. Additionally, all of our patent license agreements in China that were entered into in 2015 or thereafter, as well as our recent worldwide cellular standard-essential patent only agreements, are effective for a specified term. In order to license or to obtain a license to such later patents or after the expiration of the specified term, and to receive royalties after the expiration date of the specified term, we will need to extend or modify such license agreements or enter into new license agreements with such licensees more frequently than we have done historically. In particular, our license agreements with certain of our key Chinese licensees expire at the end of calendar year 2019. We might not be able to extend or modify those license agreements, or enter into new license agreements, in the future without negatively affecting the material terms and conditions of our license agreements with such licensees, and such modifications or new agreements may negatively impact our revenues. In some circumstances, we may extend, modify or enter into new license agreements as a result of arbitration or litigation, and terms imposed by arbitrators or courts may be less favorable to us than existing terms. If there is a delay in extending, modifying or entering into a new license agreement with a licensee, there would be a delay in our ability to recognize revenues related to that licensee's product sales. Further, if we are unable to reach agreement on such modifications or new agreements, it could result in patent infringement litigation with such companies.

We depend on a limited number of third-party suppliers for the procurement, manufacture and testing of our products manufactured in a fabless production model. If we fail to execute supply strategies that provide technology leadership, supply assurance and low cost, our business and results of operations may be harmed. We are also subject to order and shipment uncertainties that could negatively impact our results of operations.

Our QCT segment primarily utilizes a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Other than the facilities we own that manufacture our RFFE modules and RF filter acoustic products, we rely on independent third-party suppliers to perform the manufacturing and assembly, and most of the testing, of our integrated circuits. Our suppliers are also responsible for the procurement of most of the raw materials used in the production of our integrated circuits. We employ both turnkey and two-stage manufacturing models to purchase our integrated circuits. Under the turnkey model, our foundry suppliers are responsible for delivering fully assembled and tested integrated circuits. Under the two-stage manufacturing model, we purchase die in singular or wafer form from semiconductor manufacturing foundries and contract with separate third-party suppliers for manufacturing services such as wafer bump, probe, assembly and the majority of our final test requirements. The semiconductor manufacturing foundries that supply products to our QCT segment are primarily located in Asia, as are our primary warehouses where we store finished goods for fulfillment of customer orders.

The following could have an adverse effect on our ability to meet customer demand and negatively impact our revenues, business operations, profitability and cash flows:

- a reduction, interruption, delay or limitation in our product supply sources;
- a failure by our suppliers to procure raw materials or to provide or allocate adequate raw materials, manufacturing or test capacity for our products;
- our suppliers' inability to react to shifts in product demand or an increase in raw material or component prices;
- our suppliers' delay in developing leading process technologies, or inability to develop or maintain leading process technologies, including transitions to smaller geometry process technologies;
- the loss of a supplier or the inability of a supplier to meet performance, quality or yield specifications or delivery schedules;
- additional expense or production delays as a result of qualifying a new supplier and commencing volume production or testing in the event of a loss of, or a decision to add or change, a supplier; and
- natural disasters or geopolitical conflicts impacting our suppliers.

Additionally, supply and costs of raw materials may be negatively impacted by trade or national security protection policies, such as tariffs, or actions by governments that limit or prevent us from transacting business with certain companies or that limit or prevent certain companies from transacting business with us, or escalating trade tensions, particularly with countries in Asia.

While we have established alternate suppliers for certain technologies, we rely on sole- or limited-source suppliers for certain products, subjecting us to significant risks, including: possible shortages of raw materials or manufacturing capacity; poor product performance; and reduced control over delivery schedules, manufacturing capability and yields, quality assurance, quantity and costs. To the extent we have established alternate suppliers, these suppliers may require significant levels of support to bring complex technologies to production. As a result, we may invest a significant amount of effort and resources and incur higher costs to support and maintain such alternate suppliers. Further, any future consolidation of foundry suppliers could increase our vulnerability to sole- or limited-source arrangements and reduce our suppliers' willingness to negotiate pricing, which could negatively impact our ability to achieve cost reductions and could increase our manufacturing costs. Our arrangements with our suppliers may obligate us to incur costs to manufacture and test our products that do not decrease at the same rate as decreases in pricing to our customers. Our ability, and that of our suppliers, to develop or maintain leading process technologies, including transitions to smaller geometry process technologies, and to effectively compete with the manufacturing processes and performance of our competitors, could impact our ability to introduce new products and meet customer demand, could increase our costs (possibly decreasing our margins) and could subject us to the risk of excess inventories. Any of the above could negatively impact our business, results of operations and cash flows.

Although we have long-term contracts with our suppliers, many of these contracts do not provide for long-term capacity commitments. To the extent we do not have firm commitments from our suppliers over a specific time period or for any specific quantity, our suppliers may allocate, and in the past have allocated, capacity to the production and testing of products for their other customers while reducing or limiting capacity to manufacture or test our products. Accordingly, capacity for our products may not be available when we need it or at reasonable prices. To the extent we do obtain long-term capacity commitments, we may incur additional costs related to those commitments or make non-refundable payments for capacity commitments that are not used.

Our suppliers or potential alternate suppliers may manufacture CDMA- or OFDMA-based integrated circuits, for themselves or for other companies, that compete with our products. Such suppliers have in the past and could again elect to allocate raw materials and manufacturing capacity to their own products or products of our competitors and reduce or limit deliveries to us to our detriment.

In addition, we may not receive reasonable pricing, manufacturing or delivery terms from our suppliers. We cannot guarantee that the actions of our suppliers will not cause disruptions in our operations that could harm our ability to meet our delivery obligations to our customers or increase our cost of sales. To the extent we are unable to obtain adequate supply, we may be obligated to make payment to our customers for such shortfalls.

Additionally, we place orders with our suppliers using our and our customers' forecasts of customer demand, which are based on a number of assumptions and estimates. As we move to smaller geometry process technologies, the manufacturing lead-time increases. As a result, the orders we place with our suppliers are generally only partially covered by commitments from our customers. If we, or our customers, overestimate customer demand that is not under a binding commitment from our customer, we may experience increased excess or obsolete inventory, which would negatively impact our results of operations.

Claims by other companies that we infringe their intellectual property could adversely affect our business.

From time to time, companies have asserted, and may again assert, patent, copyright and other intellectual property rights against our products or products using our technologies or other technologies used in our industry. These claims have resulted and may again result in our involvement in litigation. We may not prevail in such litigation given, among other factors, the complex technical issues and inherent uncertainties in intellectual property litigation. If any of our products or services were found to infringe another company's intellectual property rights, we could be subject to an injunction or be required to redesign our products or services, which could be costly, or to license such rights or pay damages or other compensation to such other company. If we are unable to redesign our products or services, license such intellectual property rights used in our products or services or otherwise distribute our products (e.g., through a licensed supplier), we could be prohibited from making and selling such products or providing such services. Similarly, our suppliers could be found to infringe another company's intellectual property rights, and such suppliers could then be enjoined from providing products or services to us.

In any potential dispute involving us and another company's patents or other intellectual property, our chipset foundries, semiconductor assembly and test providers and customers could also become the targets of litigation. We are contingently liable under certain product sales, services, license and other agreements to indemnify certain customers, chipset foundries and semiconductor assembly and test service providers against certain types of liability and damages arising from qualifying claims of patent infringement by products or services sold or provided by us, or by intellectual property provided by us to our chipset foundries and semiconductor assembly and test service providers. Reimbursements under indemnification arrangements could have an adverse effect on our results of operations and cash flows. Furthermore, any such litigation could severely disrupt the supply of our products and the businesses of our chipset customers and their customers, which in turn could harm our relationships with them and could result in a decline in our chipset sales or a reduction in our licensees' sales, causing a corresponding decline in our chipset or licensing revenues. Any claims, regardless of their merit, could be time consuming to address, result in costly litigation, divert the efforts of our technical and management personnel or cause product release or shipment delays, any of which could have an adverse effect on our results of operations and cash flows.

We may continue to be involved in litigation and may have to appear in front of administrative bodies (such as the United States International Trade Commission) to defend against patent assertions against our products by companies, some of whom are attempting to gain competitive advantage or leverage in licensing negotiations. We may not be successful in such proceedings, and if we are not, the range of possible outcomes is very broad and may include, for example, monetary damages or fines or other orders to pay money, royalty payments, injunctions on the sale of certain of our integrated circuit products (or on the sale of our customers' devices using such products) or the issuance of orders to cease certain conduct or modify our business practices. Further, a governmental body in a particular country or region may assert, and may be successful in imposing, remedies with effects that extend beyond the borders of that country or region. In addition, a negative outcome in any such proceeding could severely disrupt the business of our chipset customers and their wireless operator customers, which in turn could harm our relationships with them and could result in a decline in our worldwide chipset sales or a reduction in our licensees' sales to wireless operators, causing corresponding declines in our chipset or licensing revenues.

Certain legal matters, which may include certain claims by other companies that we infringe their intellectual property, are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

We may engage in strategic acquisitions, transactions or make investments, or be unable to consummate planned strategic acquisitions, which could adversely affect our results of operations or fail to enhance stockholder value.

We engage in strategic acquisitions and other transactions, including joint ventures, and make investments, which we believe are important to the future of our business, with the goal of maximizing stockholder value. From time to time, we acquire businesses and other assets, including patents, technology, wireless spectrum and other intangible assets, enter into joint ventures or other strategic transactions and purchase minority equity interests in or make loans to companies, including those that may be private and early-stage. Our strategic activities are generally focused on opening or expanding opportunities for our products and technologies and supporting the design and introduction of new products and services (or enhancing existing products or services) for voice and data communications and new industry segments. Many of our strategic activities entail a high degree of risk and require the use of significant amounts of capital, and investments may not become liquid for several years after the date of the investment, if at all. Our strategic activities may not generate financial returns or result in increased adoption or continued use of our technologies, products or services. We may underestimate the costs or overestimate the benefits, including product, revenue, cost and other synergies and growth opportunities that we expect to realize, and we may not achieve those benefits. In some cases, we may be required to consolidate or record our share of the earnings or losses of companies in which we have acquired ownership interests. In addition, we may record impairment charges related to our strategic activities. Any losses or impairment charges that we incur related to strategic activities will have a negative impact on our financial condition and results of operations, and we may continue to incur new or additional losses related to strategic assets or investments that we have not fully impaired or exited.

Achieving the anticipated benefits of business acquisitions, including joint ventures and other strategic investments in which we have management and operational control, depends in part upon our ability to integrate the businesses in an efficient and effective manner and achieve anticipated synergies, and we may not be successful in these efforts. Such integration is complex and time consuming and involves significant challenges, including, among others: retaining key employees; successfully integrating new employees, technology, products, processes, operations (including manufacturing operations), sales and distribution channels, business models and business systems; retaining customers and suppliers of the businesses; consolidating research and development and supply operations; minimizing the diversion of management's attention from ongoing business matters; consolidating corporate and administrative infrastructures; and managing the increased scale, complexity and globalization of our business, operations and employee base. We may not derive any commercial value from associated technologies or products or from future technologies or products based on these technologies, and we may be subject to liabilities that are not covered by indemnification protection that we may obtain, and we may become subject to litigation. Additionally, we may not be successful in entering or expanding into new sales or distribution channels, business or operational models (including manufacturing), geographic regions, industry segments or categories of products served by or adjacent to the associated businesses or in addressing potential new opportunities that may arise out of the combination.

If we do not achieve the anticipated benefits of business acquisitions or other strategic activities, our business and results of operations may be adversely affected, and we may not enhance stockholder value by engaging in these transactions.

Many of our acquisitions and other strategic investments require approval by the United States and/or foreign government agencies. Certain agencies in the past have, and may in the future, deny the transaction or fail to approve in a timely manner, resulting in us not realizing the anticipated benefits of the transaction. Future acquisitions or other strategic investments may be more difficult, complex or expensive to the extent that our reputation for our ability to consummate acquisitions has been harmed. Further, if U.S./China trade relations remain strained, our ability to consummate any transaction that would require approval from the State Administration for Market Regulation (SAMR) in China may be severely impacted.

We are subject to various laws, regulations, policies and standards. Our business may suffer as a result of existing, new or amended laws, regulations, policies or standards, or our failure or inability to comply with laws, regulations, policies or standards.

Our business, products and services, and those of our customers and licensees, are subject to various laws and regulations globally, as well as government policies and the specifications of international, national and regional communications standards bodies. Compliance with existing laws, regulations, policies and standards, the adoption of new laws, regulations, policies or standards, changes in the interpretation of existing laws, regulations, policies or standards, changes in the regulation of our activities by a government or standards body or rulings in court, regulatory, administrative or other proceedings relating to such laws, regulations, policies or standards, including, among others, those affecting licensing practices, competitive business practices, the use of our technology or products, protection of intellectual property, trade and trade protection including tariffs, cybersecurity, foreign currency, investments or loans, spectrum availability and license issuance, adoption of standards, the provision of device subsidies by wireless operators to their customers, taxation, export control, privacy and data protection, environmental protection, health and safety, labor and employment, human rights, corporate governance, public disclosure or business conduct, could have an adverse effect on our business and results of operations.

Government policies, particularly in China, that regulate the amount and timing of funds that may flow out of a country have impacted and may continue to impact the timing of our receipt of and/or ability to receive payments from our customers and licensees in such countries, which may negatively impact our cash flows.

Further, China has implemented, and other countries or regions may implement, cybersecurity laws that require that our overall information technology security environment meet certain standards and/or to be certified. Such laws may be complex, ambiguous and subject to interpretation, which may create uncertainty regarding compliance. As a result, our efforts to comply with such laws may be expensive and may fail, which could adversely affect our business, results of operations and cash flows.

Delays in government approvals or other governmental activities that could result from, among others, a decrease in or a lack of funding for certain agencies or branches of the government, trade or national security protection policies, or political changes, could result in our incurring higher costs, could negatively impact our ability to timely consummate strategic transactions and could have other negative impacts on our business and the businesses of our customers and licensees.

Import/export regulations, such as the U.S. Export Administration Regulations administered by the U.S. Department of Commerce, are complex, change frequently, have generally become more stringent over time and have intensified under the current U.S. administration. If our customers or suppliers fail to comply with these regulations, we may be required to suspend activities with these customers or suppliers, which could negatively impact our results of operations. Additionally, we may be required to incur significant expense to comply with, or to remedy violations of, these regulations.

National, state and local environmental laws and regulations affect our operations around the world. These laws may make it more expensive to manufacture, have manufactured and sell products, and our costs could increase if our vendors (e.g., suppliers, third-party manufacturers or utility companies) pass on their costs to us. The imposition of tariffs on raw materials or our products could also have a negative impact on our revenues and results of operations. We are also subject to laws and regulations impacting our manufacturing operations. See the Risk Factor entitled "There are numerous risks associated with the operation and control of our manufacturing facilities, including a higher portion of fixed costs relative to a fabless model, environmental compliance and liability, exposure to natural disasters, timely supply of equipment and materials, and various manufacturing issues."

Regulations in the United States require that we determine whether certain materials used in our products, referred to as conflict minerals, originated in the Democratic Republic of the Congo or an adjoining country (collectively, the Covered Countries), or were from recycled or scrap sources. Other countries and regions are imposing similar regulations, which may require us to undertake additional verification and reporting, including regarding countries in addition to the Covered Countries and minerals in addition to conflict minerals. The verification and reporting requirements, in addition to customer demands for conflict free sourcing, impose additional costs on us and on our suppliers and may limit the sources or increase the prices of materials used in our products. Further, if we are unable to determine that the conflict minerals used in our products do not directly or indirectly finance or benefit armed groups in the Covered Countries, we may face challenges with our customers that place us at a competitive disadvantage, and our reputation may be harmed. Similarly, other laws and regulations have been adopted or proposed that require additional transparency regarding the employment practices of our suppliers, and any failure to maintain responsible sourcing practices could also adversely affect our relationships with customers and our reputation.

Laws, regulations, policies and standards are complex and changing and may create uncertainty regarding compliance. Laws, regulations, policies and standards are subject to varying interpretations in many cases, and their application in practice may evolve over time. As a result, our efforts to comply may fail, particularly if there is ambiguity as to how they should be applied in practice. Failure to comply with any law, regulation, policy or standard may adversely affect our business, results of operations and cash flows. New laws, regulations, policies and standards or evolving interpretations of legal requirements may cause us to incur higher costs as we revise current practices, policies or procedures and may divert management time and attention to compliance activities.

Our use of open source software may harm our business.

Certain of our software and our suppliers' software may contain or may be derived from "open source" software, and we have seen, and believe we will continue to see, an increase in customers requesting that we develop products, including software associated with our integrated circuit products, that incorporate open source software elements and operate in an open source environment, which, under certain open source licenses, may offer accessibility to a portion of a product's source code and may expose related intellectual property to adverse licensing conditions. Licensing of such software may impose certain obligations on us if we were to distribute derivative works of the open source software. For example, these obligations may require us to make source code for the derivative works available to our customers in a manner that allows them to make such source code available to their customers or license such derivative works under a particular type of license that is different than what we customarily use to license our software. Furthermore, in the course of product development, we may make contributions to third party open source projects that could obligate our intellectual property to adverse licensing conditions. For example, to encourage the growth of a software ecosystem that is interoperable with our products, we may need to contribute certain implementations under the open source licensing terms that govern such projects, which may adversely impact certain of our associated intellectual property. Developing open source products, while adequately protecting the intellectual property rights upon which our licensing business depends, may prove burdensome and time-consuming under certain circumstances, thereby placing us at a competitive disadvantage, and we may not adequately protect our intellectual property rights. Also, our use and our customers' use of open source software may subject our products and our customers' products to governmental scrutiny and delays in product certification, which could cause customers to view our products as less desirable than our competitors' products. While we believe we have taken appropriate steps and employ adequate controls to protect our intellectual property rights, our contributions to and use of open source software presents risks that could have an adverse effect on these rights and on our business.

We operate in the highly cyclical semiconductor industry, which is subject to significant downturns that may adversely impact our business. Our stock price, earnings and the fair value of our investments are subject to substantial quarterly and annual fluctuations due to this dynamic and others, and to market downturns generally.

The semiconductor industry is highly cyclical and characterized by constant and rapid technological change, price erosion, evolving technical standards, frequent new product introductions, short product life cycles (for both semiconductors and for many of the products in which they are used) and fluctuations in product supply and demand. From time to time, these factors, together with changes in general economic conditions, cause significant upturns and downturns in the semiconductor industry. Periods of downturns have been characterized by diminished demand for end-user products, high inventory levels, periods of inventory adjustment, underutilization of manufacturing capacity, changes in revenue mix and erosion of average selling prices. We expect our business to continue to be subject to cyclical downturns, even when overall economic conditions are relatively stable. If we cannot offset semiconductor industry or market downturns, our revenues may decline, and our financial condition and results of operations may be adversely impacted.

Our stock price and earnings have fluctuated in the past and are likely to fluctuate in the future. Factors that may have a significant impact on the market price of our stock and earnings include those identified above and throughout this Risk Factors section; volatility of the stock market in general and technology-based and semiconductor companies in particular; announcements concerning us, our suppliers, our competitors or our customers or licensees; and variations between our actual financial results or guidance and expectations of securities analysts or investors, among others. Further, increased volatility in the financial markets and overall economic conditions may reduce the amounts that we realize in the future on our cash equivalents and marketable securities and may reduce our earnings as a result of any reductions in the fair values of marketable securities.

In the past, securities class action litigation has been brought against companies following periods of volatility in the market price of their securities. Due to changes in our stock price, we are and may in the future be the target of securities litigation. Securities litigation could result in substantial uninsured costs and divert management's attention and our resources. Certain legal matters, including certain securities litigation brought against us, are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

There are risks associated with our indebtedness and our significant stock repurchase program.

Our outstanding indebtedness and any additional indebtedness we incur may have negative consequences on our business, including, among others:

- requiring us to use cash to pay the principal of and interest on our indebtedness, thereby reducing the amount of cash available for other purposes;
- limiting our ability to obtain additional financing for working capital, capital expenditures, acquisitions, stock repurchases, dividends or general corporate or other purposes;
- limiting our flexibility in planning for, or reacting to, changes in our business, our industry and the market; and
- increasing our vulnerability to interest rate fluctuations to the extent a portion of our debt has variable interest rates.

Our ability to make payments of principal and interest on our indebtedness depends upon our future performance, which is subject to economic and political conditions, industry cycles and financial, business and other factors, including factors which negatively impact our cash flows, such as licensees withholding some or all of the royalty payments they owe to us or our paying fines or modifying our business practices in connection with regulatory investigations or litigation, many of which are beyond our control. If we are unable to generate sufficient cash flow from operations in the future to service our debt, we may be required to, among other things: refinance or restructure all or a portion of our indebtedness; reduce or delay planned capital or operating expenditures; reduce or eliminate our dividend payments; or sell selected assets. Such measures might not be sufficient to enable us to service our debt. In addition, any such refinancing, restructuring or sale of assets might not be available on economically favorable terms or at all, and if prevailing interest rates at the time of any such refinancing or restructuring are higher than our current rates, interest expense related to such refinancing or restructuring would increase. If there are adverse changes in the ratings assigned to our debt securities by credit rating agencies, our borrowing costs, our ability to access debt in the future and the terms of such debt could be adversely affected.

Our current outstanding variable rate indebtedness uses LIBOR as a benchmark for establishing the interest rate. LIBOR is the subject of recent national, international and other regulatory guidance and proposals for reform. These reforms may cause LIBOR to disappear entirely after 2021 or to perform differently than in the past. We expect that reasonable alternatives to LIBOR will be created and implemented prior to the 2021 target date. Fallback provisions are being written into LIBOR-based contracts to attempt to reduce the risk of sudden and unpredictable increases in the cost of variable rate indebtedness. However, we cannot predict the consequences and timing of these developments.

We have implemented a stock repurchase program to repurchase up to $30 billion of our outstanding common stock. This stock repurchase program has significantly reduced and will continue to reduce the amount of cash that we have available to fund our operations, including research and development, working capital, capital expenditures, acquisitions, investments, dividends and other corporate purposes; and increases our exposure to adverse economic, market, industry and competitive conditions and developments, and other changes in our business and our industry. In addition, this significant decrease in our cash reserves exacerbates the risks described above associated with our indebtedness.

Our business and operations could suffer in the event of security breaches of our information technology systems, or other misappropriation of our intellectual property or proprietary or confidential information.

Third parties regularly attempt to gain unauthorized access to our information technology systems, and most of such attempts are increasingly more sophisticated. These attempts, which might be related to industrial or other espionage, criminal hackers or state-sponsored intrusions, include trying to covertly introduce malware to our computers and networks, including those in our manufacturing operations, and impersonating authorized users, among others. In addition, third party suppliers that we may rely on to store and/or process our confidential information may also be subject to similar attacks. Such attempts could result in the misappropriation, theft, misuse, disclosure or loss or destruction of the intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, as well as damage to or disruptions in our information technology systems. These threats are constantly evolving, thereby increasing the difficulty of successfully defending against them or implementing adequate preventative measures.

We seek to detect and investigate all security incidents and to prevent their recurrence, but attempts to gain unauthorized access to our information technology systems may be successful, and in some cases, we might be unaware of an incident or its magnitude and effects. The misappropriation, theft, misuse, disclosure or loss or destruction of the intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives, cause us to lose business, damage our reputation, subject us to legal or regulatory proceedings, cause us to incur other loss or liability and otherwise adversely affect our business. We expect to continue to devote significant resources to the security of our information technology systems.

In addition, employees and former employees, in particular former employees who become employees of our competitors, customers or licensees, may misappropriate, use, publish or provide to our competitors, customers, licensees or other third parties our intellectual property or proprietary or confidential business information. This risk is exacerbated as competitors for talent, particularly engineering talent, increasingly attempt to hire our employees. See the Risk Factor entitled "We may not be able to attract and retain qualified employees." Similarly, we provide access to certain of our intellectual property or proprietary or confidential business information to our direct and indirect customers and licensees and certain of our consultants, who may wrongfully use such intellectual property or information, or wrongfully disclose such intellectual property or information to third parties, including our competitors.

Potential tax liabilities could adversely affect our results of operations.

We are subject to income taxes in the United States and numerous foreign jurisdictions. Significant judgment is required in determining our provision for income taxes. We regularly are subject to examination of our tax returns and reports by taxing authorities in the United States federal jurisdiction and various state and foreign jurisdictions, most notably in countries where we earn a routine return and the tax authorities believe substantial value-add activities are performed. Our current examinations are at various stages with respect to assessments, claims, deficiencies and refunds. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts giving rise to a revision become known. Although we believe that our tax estimates are reasonable, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our historical income tax provisions and accruals. In such case, our income tax provision, results of operations and cash flows in the period or periods in which that determination is made could be negatively affected.

The United States Treasury Department has issued proposed regulations on several provisions of the Tax Legislation, including foreign tax credits, FDII, BEAT and interest expense deduction limitations, which are expected to be finalized in the next several months. When finalized, these proposed regulations may adversely affect our provision for income taxes, results of operations and/or cash flows.

We have tax incentives in Singapore provided that we meet specified employment and other criteria, and as a result of the expiration of these incentives, our Singapore tax rate is expected to increase in fiscal 2022 and again in fiscal 2027. If we do not meet the criteria required to retain such incentives, our Singapore tax rate could increase prior to fiscal 2022, and our results of operations and cash flows could be adversely affected.

Tax rules may change in a manner that adversely affects our future reported results of operations or the way we conduct our business. Further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project that was undertaken by the Organization for Economic Co-operation and Development (OECD). The OECD, which represents a coalition of member countries, recommended changes to numerous long-standing tax principles related to transfer pricing. These changes, as adopted by countries, may increase tax uncertainty and may adversely affect our provision for income taxes, results of operations and cash flows. Partially to address BEPS, we moved certain IP from Singapore to the United States. As a result, if tax rates were to increase in the United States, our results of operations, cash flows and financial condition could be adversely affected.

Global, regional or local economic conditions, or political actions including trade and/or national security protection policies, such as tariffs, that impact the mobile communications industry or the other industries in which we operate could negatively affect the demand for our products and services and our customers' or licensees' products and services, which may negatively affect our revenues.

A decline in global, regional or local economic conditions, a slow-down in economic growth, political actions including trade and/or national security protection policies, such as tariffs, or actions by governments that limit or prevent us from transacting business with certain companies or that limit or prevent certain companies from transacting business with us, particularly in geographic regions with high concentrations of wireless voice and data users or high concentrations of our customers or licensees, could have adverse, wide-ranging effects on demand for our products and services and for the products and services of our customers or licensees, particularly equipment manufacturers or others in the wireless communications industry who buy their products, such as wireless operators. Any prolonged economic downturn or "trade war" may result in a decrease in demand for our products and technologies; a decrease in demand for the products of our customers or licensees; the insolvency of key suppliers, customers or licensees; delays in reporting or payments from our licensees or customers; failures by counterparties; and negative effects on wireless device inventories. In addition, our customers' ability to purchase or pay for our products and services and network operators' ability to upgrade their wireless networks could be adversely affected by economic conditions, leading to a reduction, cancelation or delay of orders for our products and services.

We may not be able to attract and retain qualified employees.

Our future success depends largely upon the continued service of our executive officers and other key management and technical personnel, and on our ability to continue to identify, attract, retain and motivate them. Implementing our business strategy requires specialized engineering and other talent, as our revenues are highly dependent on technological and product innovations. The market for employees in our industry is extremely competitive, and competitors for talent, particularly engineering talent, increasingly attempt to hire, and to varying degrees have been successful in hiring, our employees, including by establishing local offices near our headquarters in San Diego, California. A number of such competitors for talent are significantly larger than us and are able to offer compensation in excess of what we are able to offer. Further, existing immigration laws make it more difficult for us to recruit and retain highly skilled foreign national graduates of universities in the United States, making the pool of available talent even smaller. If we are unable to attract and retain qualified employees, our business may be harmed.

Currency fluctuations could negatively affect future product sales or royalty revenues, harm our ability to collect receivables or increase the U.S. dollar cost of our products.

Our customers sell their products throughout the world in various currencies. Our consolidated revenues from international customers and licensees accounted for a significant portion of our total revenues in each of the last three fiscal years. Adverse movements in currency exchange rates may negatively affect our business, revenues, results of operations and cash flows due to a number of factors, including, among others:

- Our products and those of our customers and licensees that are sold outside the United States may become less price-competitive, which may result in reduced demand for those products or downward pressure on average selling prices;
- Certain of our revenues that are derived from products that are sold in foreign currencies could decrease, resulting in lower revenues, cash flows and margins;
- Certain of our revenues, such as royalties, that are derived from licensee or customer sales denominated in foreign currencies could decrease, resulting in lower revenues and cash flows;
- Our foreign suppliers may raise their prices if they are impacted by currency fluctuations, resulting in higher than expected costs, and lower margins and cash flows;
- Certain of our costs that are denominated in foreign currencies could increase, resulting in higher than expected costs and cash outflows; and
- Foreign exchange hedging exposes us to counterparty risk and may require the payment of structuring fees. If the foreign exchange hedges do not qualify for hedge accounting, the hedge results may cause earnings volatility. The foreign exchange hedging activities are designed to lessen earnings volatility; therefore, hedges may reduce the impact of currency fluctuations to certain revenues and costs.

Failures in our products or services, or in the products or services of our customers or licensees, including those resulting from security vulnerabilities, defects or errors, could harm our business.

The use of devices containing our products to interact with untrusted systems or otherwise access untrusted content creates a risk of exposing the system hardware and software in those devices to malicious attacks. While we continue to focus on this issue and are taking measures to safeguard our products from cybersecurity threats, device capabilities continue to evolve, enabling more elaborate functionality and applications, and increasing the risk of security failures. Further, our products are inherently complex and may contain defects or errors that are detected only when the products are in use. Development of products and features in new domains of technology and the migration to integrated circuit technologies with smaller geometric feature sizes are complex, add risk to manufacturing yields and reliability and increase the likelihood of product defects or errors. Because our products and services are responsible for critical functions in our customers' products and networks, security failures, defects or errors in our products or services could have an adverse impact on us, on our customers and the end users of our customers' products. Such adverse impact could include shipment delays; write-offs of our inventories, property, plant and equipment and intangible assets; unfavorable purchase commitments; a shift of business to our competitors; a decrease in demand for connected devices and wireless services; damage to our reputation and our customer relationships; regulatory actions; and other financial liability or harm to our business. In addition, security failures, defects or errors in the products of our customers or licensees could have an adverse impact on our results of operations and cash flows due to a delay or decrease in demand for our products or services generally, and our premium-tier products in particular, among other factors. Further, failures, defects or errors in our products or those of our customers or licensees entail the risk of product liability claims or recalls.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

At September 29, 2019, we occupied the following facilities (square footage in millions):

	United States	Other Countries	Total
Owned facilities	4.4	0.4	4.8
Leased facilities	0.9	5.3	6.2
Total	5.3	5.7	11.0

Our headquarters as well as certain research and development, manufacturing and network management hub operations are located in San Diego, California. Additionally, our QCT segment's non-United States headquarters is located in Singapore. Our QCT segment also operates leased manufacturing facilities in Germany, China and Singapore. We also own and lease properties around the world for use as sales and administrative offices and research and development centers, primarily in the United States and India. Our facility leases expire at varying dates through 2032, not including renewals that are at our option. Several other owned and leased facilities are under construction totaling approximately 1.3 million additional square feet, primarily related to the construction of new facilities in India and a new manufacturing facility in Singapore.

We believe that our facilities are suitable and adequate for our present purposes and that the productive capacity in facilities that are not under construction is substantially utilized. We do not identify or allocate facilities by operating segment. Additional information on net property, plant and equipment by geography is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information." In the future, we may need to purchase, build or lease additional facilities to meet the requirements projected in our long-term business plan.

Item 3. Legal and Regulatory Proceedings

Information regarding legal and regulatory proceedings is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We are also engaged in numerous other legal actions arising in the ordinary course of our business and, while there can be no assurance, we believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information and Dividends

Our common stock is traded on the NASDAQ Global Select Market (NASDAQ) under the symbol "QCOM." At November 4, 2019, there were 6,683 holders of record of our common stock.

We intend to continue to pay quarterly dividends, subject to capital availability and our view that cash dividends are in the best interests of our stockholders. Future dividends may be affected by, among other items, our views on potential future capital requirements, including those relating to research and development, creation and expansion of sales and distribution channels, investments and acquisitions, legal risks, withholding of payments by one or more of our significant licensees and/or customers, fines by government agencies and/or adverse rulings by a court or arbitrator in a legal matter, stock repurchase programs, debt issuances, changes in federal and state income tax law and changes to our business model.

Share-Based Compensation

We primarily issue restricted stock units under our equity compensation plans, which are part of a broad-based, long-term retention program that is intended to attract and retain talented employees and directors and align stockholder and employee interests.

Our 2016 Long-Term Incentive Plan (2016 Plan) provides for the grant of both incentive and nonstatutory stock options, stock appreciation rights, restricted stock, unrestricted stock, restricted stock units, performance units, performance shares, deferred compensation awards and other stock-based awards. Restricted stock units generally vest over periods of three years from the date of grant. Stock options vest over periods not exceeding five years and are exercisable for up to ten years from the grant date. The Board of Directors may amend or terminate the 2016 Plan at any time, with certain amendments also requiring stockholder approval.

Additional information regarding our share-based compensation plans and plan activity for fiscal 2019, 2018 and 2017 is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 5. Employee Benefit Plans."

Issuer Purchases of Equity Securities

Issuer purchases of equity securities during the fourth quarter of fiscal 2019 were:

	Total Number of Shares Purchased	Average Price Paid Per Share (1)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (2)
	(In thousands)		(In thousands)	(In millions)
July 1, 2019 to July 28, 2019	2,368	$ 76.01	2,368	$ 7,589
July 29, 2019 to August 25, 2019	2,502	71.94	2,502	7,409
August 26, 2019 to September 29, 2019				
Other repurchases	4,489	77.07	4,489	7,063
Accelerated share repurchases (3)	68,682		68,682	7,063
Total	78,041		78,041	

(1) Average Price Paid Per Share excludes cash paid for commissions.

(2) On July 26, 2018, we announced a repurchase program authorizing us to repurchase up to $30 billion of our common stock. At September 29, 2019, $7.1 billion remained authorized for repurchase. The stock repurchase program has no expiration date. Since September 29, 2019, we repurchased and retired 3.9 million shares of common stock for $300 million. Shares withheld to satisfy statutory tax withholding requirements related to the vesting of share-based awards are not issued or considered stock repurchases under our stock repurchase program and, therefore, are excluded from the table above.

(3) In September 2018, we entered into three accelerated share repurchase agreements (ASR Agreements) to repurchase an aggregate of $16.0 billion of our common stock. During the fourth quarter of fiscal 2018, 178.4 million shares were initially delivered to us under the ASR Agreements and were retired. The ASR Agreements were completed during the fourth quarter of fiscal 2019, and an

additional 68.7 million shares were delivered to us and were retired, comprising the final delivery of shares under the ASR Agreements. In total, 247.1 million shares were delivered to us under the ASR Agreements at an average price per share of $64.76.

Item 6. Selected Financial Data

The following data should be read in conjunction with the annual consolidated financial statements, related notes and other financial information appearing elsewhere herein. We have revised our prior period financial statements for the years ended September 30, 2018 and September 24, 2017 to reflect the correction of an immaterial error as described in this Annual Report in Notes to Consolidated Financial Statements, "Note 1. Significant Accounting Policies" and "Note 12. Revision of Prior Period Financial Statements."

	Years Ended (1)				
	September 29, 2019	September 30, 2018	September 24, 2017	September 25, 2016	September 27, 2015
	(In millions, except per share data)				
Statement of Operations Data:					
Revenues (2)	$ 24,273	$ 22,611	$ 22,258	$ 23,554	$ 25,281
Operating income	7,667	621	2,581	6,495	5,776
Net income (loss) attributable to Qualcomm (2)	4,386	(4,964)	2,445	5,705	5,271
Per Share Data:					
Basic earnings (loss) per share attributable to Qualcomm:	3.63	(3.39)	1.66	3.84	3.26
Diluted earnings (loss) per share attributable to Qualcomm:	3.59	(3.39)	1.64	3.81	3.22
Dividends per share announced	2.48	2.38	2.20	2.02	1.80
Balance Sheet Data:					
Cash, cash equivalents and marketable securities (3)	$ 12,296	$ 12,123	$ 38,578	$ 32,350	$ 30,947
Total assets (3)	32,957	32,718	65,498	52,359	50,796
Short-term debt (4)	2,496	1,005	2,495	1,749	1,000
Long-term debt (5)	13,437	15,365	19,398	10,008	9,969
Other long-term liabilities (6)	4,516	3,537	2,432	895	817
Total stockholders' equity (3)	4,909	807	30,725	31,768	31,414

(1) Our fiscal year ends on the last Sunday in September. The fiscal year ended September 29, 2019, September 24, 2017, September 25, 2016 and September 27, 2015 each included 52 weeks. The fiscal year ended September 30, 2018 included 53 weeks.

(2) Revenues in fiscal 2019 included $4.7 billion resulting from the settlement with Apple and its contract manufacturers. Revenues in fiscal 2019 also reflected the impact of the adoption of the new revenue recognition guidance in the first quarter of fiscal 2019. Operating income in fiscal 2019 was impacted by a $275 million charge attributed to a fine imposed by the European Commission (EC) and $213 million in net charges related to our Cost Plan. Additionally, net income for fiscal 2019 was impacted by a $2.5 billion charge to income tax expense resulting from the derecognition of a deferred tax asset related to the distributed intellectual property and a tax benefit of $570 million due to establishing new U.S. net deferred tax assets from making certain check-the-box elections.

Revenues in fiscal 2018 were negatively impacted by our prior dispute with Apple and its contract manufacturers, partially offset by $600 million paid under an interim agreement with Huawei. Operating income in fiscal 2018 was further impacted by a $2.0 billion charge related to a fee in connection with the termination of a purchase agreement to acquire NXP Semiconductors N.V., a $1.2 billion charge related to a fine imposed by the EC and $629 million in charges related to our Cost Plan, partially offset by a $676 million benefit resulting from a settlement with the Taiwan Fair Trade Commission (TFTC). Additionally, net loss for fiscal 2018 was impacted by the $5.7 billion charge related to the Tax Legislation.

Revenues in fiscal 2017 were negatively impacted by actions taken by Apple and its contract manufacturers and Huawei, who did not fully report or fully pay royalties due in the last three quarters of fiscal 2017, as well as a $940 million reduction to revenues recorded related to the BlackBerry arbitration. Operating income was further impacted by $927 million and $778 million in charges related to the fines imposed by the Korea Fair Trade Commission and TFTC, respectively.

(3) In the fourth quarter of fiscal 2018, we announced a stock repurchase program authorizing us to repurchase up to $30 billion of our common stock. Under this program, we completed a tender offer and paid an aggregate of $5.1 billion to repurchase shares of our common stock and entered into three accelerated share repurchase agreements to repurchase an aggregate of $16.0 billion of our

common stock, resulting in significant reductions to the balances of our cash, cash equivalents and marketable securities, total assets and total stockholders' equity.

(4) Short-term debt was comprised of outstanding commercial paper and, in fiscal 2019 and fiscal 2017, the current portion of long-term debt.

(5) Long-term debt was comprised of floating- and fixed-rate notes.

(6) Other long-term liabilities in this balance sheet data includes non-current income taxes payable and excludes unearned revenues.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

In addition to historical information, the following discussion contains forward-looking statements that are subject to risks and uncertainties. Actual results may differ materially from those referred to herein due to a number of factors, including but not limited to risks described in "Part I, Item 1A. Risk Factors" and elsewhere in this Annual Report.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included in "Part II, Item 8. Financial Statements and Supplementary Data" of this Annual Report.

Fiscal 2019 Overview

Revenues were $24.3 billion, an increase of 7% from fiscal 2018, with net income of $4.4 billion, compared to net loss of $5.0 billion in fiscal 2018. Highlights and other events from fiscal 2019 included:

- From October 2018 through September 2019, approximately 1.4 billion smartphones are estimated to have shipped globally, representing a year-over-year decrease of approximately 4% (IDC, Mobile Phone Tracker, 2019Q3), primarily driven by further lengthening of replacement cycles, particularly in developed regions and China where consumer demand is increasingly driven by new product launches and/or innovation cycles as the industry transitions to 5G.

- QCT results in fiscal 2019 were negatively impacted by lower modem sales to Apple.

- In April 2019, we entered into settlement agreements with Apple and its contract manufacturers to dismiss all outstanding litigation between the parties. We also entered into a six-year global patent license agreement with Apple, effective as of April 1, 2019, which includes an option for Apple to extend for two additional years, and a multi-year chipset supply agreement with Apple. In the third quarter of fiscal 2019, we recognized licensing revenues of $4.7 billion resulting from the settlement, consisting of a payment from Apple and the release of certain of our obligations to pay Apple and its contract manufacturers customer-related liabilities. In addition, our QTL results for the third and fourth quarters of fiscal 2019 included royalties from Apple and its contract manufacturers for sales made in such quarters.

- QTL results in fiscal 2019 reflected certain reductions made in the per unit royalty caps (which provide a maximum royalty amount payable per device) in fiscal 2019 and 2018. While we expect these changes to enhance stability for the long term, they negatively impacted QTL royalty revenues in fiscal 2019. In addition, an increasing number of new and existing licensees have elected to enter into worldwide license agreements covering only our cellular standard essential patents, resulting in lower QTL royalty revenues in fiscal 2019.

- QTL revenues in fiscal 2019 included $450 million paid under a second interim agreement with Huawei that concluded in the third quarter of fiscal 2019, and although negotiations continue, we have not reached a final agreement with Huawei. This represents a minimum, non-refundable amount for royalties due and does not reflect the full amount of royalties due under the underlying license agreement. We did not record any revenues in the fourth quarter of fiscal 2019 for royalties due on the sales of Huawei's products.

- In May 2019, in *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated*, the court issued an Order ruling against us and imposing certain injunctive relief. We disagree with the court's conclusions, interpretation of the facts and application of the law. Accordingly, we filed a motion to stay certain of the remedies with, and have appealed the decision to, the Ninth Circuit Court of Appeals (Ninth Circuit). In August 2019, our partial motion to stay was granted in its entirety by the Ninth Circuit. The impact of the Order and the Ninth Circuit granting our motion for partial stay did not have a material impact to QTL licensing revenues recognized in fiscal 2019 based on facts and factors currently known by us.

- In July 2019, the European Commission (EC) issued a decision ruling that between 2009 and 2011 we engaged in predatory pricing with respect to two customers and imposed a fine (2019 EC fine) of approximately 242 million Euros, which resulted in a $275 million charge to other expenses in the third quarter of fiscal 2019. In October 2019, we filed an appeal of the EC's decision, and we provided a financial guarantee to satisfy the obligation in lieu of a cash payment while we appeal the EC's decision.

- In the second quarter of fiscal 2018, we announced a Cost Plan designed to align our cost structure to our long-term margin targets. As part of this plan, we initiated a series of targeted actions across our businesses with the objective to reduce annual costs by $1 billion, excluding incremental costs resulting from any future acquisition of a business. Actions taken under this plan have been completed and resulted in us achieving substantially all of this target in fiscal

2019 based on our run rate exiting the second quarter of fiscal 2019, excluding litigation costs that were in excess of the baseline spend. We recorded net restructuring and restructuring-related charges of $213 million in fiscal 2019 related to our Cost Plan.

- Beginning in fiscal 2019, certain provisions of the 2017 U.S. Tax Cuts and Jobs Act (the Tax Legislation) became effective, including new taxes on certain foreign income. Our estimated annual effective tax rate for fiscal 2019 reflected the effects of these provisions of the Tax Legislation, and it also included the effects of tax elections made by several of our foreign subsidiaries in the first quarter of fiscal 2019 to be treated as U.S. branches for federal income tax purposes effective beginning in fiscal 2018 and 2019, which resulted in an income tax benefit of $570 million recorded discretely in the first quarter of fiscal 2019.

- During the third quarter of fiscal 2019, the United States Treasury Department issued new temporary regulations that resulted in a change to the deductibility of dividend income received by a U.S. stockholder from a foreign corporation. As a result of this change, pursuant to an agreement with the Internal Revenue Service, we relinquished the federal tax basis step-up of intellectual property that was distributed in fiscal 2018 by one of our foreign subsidiaries to a U.S. subsidiary. Therefore, the related deferred tax asset was derecognized, resulting in a $2.5 billion charge to income tax expense in the third quarter of fiscal 2019.

Our Business and Operating Segments

We develop and commercialize foundational technologies and products used in mobile devices and other wireless products. We derive revenues principally from sales of integrated circuit products and licensing our intellectual property, including patents and other rights.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on CDMA, OFDMA and other technologies for use in mobile devices (primarily smartphones), tablets, laptops, data modules, handheld wireless computers and gaming devices, access points and routers, broadband gateway equipment, data cards and infrastructure equipment, IoT devices and applications, other consumer electronics and automotive telematics and infotainment systems. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale and/or use of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including Qualcomm Government Technologies or QGOV (formerly Qualcomm Cyber Security Solutions) and other wireless technology and service initiatives.

Our reportable segments are operated by QUALCOMM Incorporated and its direct and indirect subsidiaries. Substantially all of our products and services businesses, including QCT, and substantially all of our engineering, research and development functions, are operated by Qualcomm Technologies, Inc. (QTI), a wholly-owned subsidiary of QUALCOMM Incorporated, and QTI's subsidiaries. QTL is operated by QUALCOMM Incorporated, which owns the vast majority of our patent portfolio. Neither QTI nor any of its subsidiaries has any right, power or authority to grant any licenses or other rights under or to any patents owned by QUALCOMM Incorporated.

Further information regarding our business and operating segments is provided in "Part I, Item 1. Business" of this Annual Report.

Seasonality. Many of our products and/or much of our intellectual property are incorporated into consumer wireless devices, which are subject to seasonality and other fluctuations in demand. Our revenues have historically fluctuated based on consumer demand for devices, as well as on the timing of customer/licensee device launches and/or innovation cycles (such as the transition to the next generation of wireless technologies). This has resulted in fluctuations in QCT revenues in advance of and during device launches incorporating our products and in QTL revenues when the related royalties were recognized, which prior to fiscal 2019 was when licensees reported their sales and beginning in fiscal 2019 was when the licensees' sales occurred. Our historical trends were impacted by our prior dispute with Apple and its contract manufacturers, which was settled in April 2019. We expect to begin recording revenues for new chipset models under our recently announced multi-year chipset agreement with Apple in the second half of fiscal 2020. These trends may or may not continue in the future. Further, the trends for QTL have been, and/or may in the future be, impacted by disputes and/or resolutions with licensees and/or governmental investigations or proceedings, including the lawsuit filed against us by the FTC.

Results of Operations

Revenues (in millions)

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Equipment and services	$ 14,611	$ 17,400	$ 16,647	$ (2,789)	$ 753
Licensing	9,662	5,211	5,611	4,451	(400)
	$ 24,273	$ 22,611	$ 22,258	$ 1,662	$ 353

2019 vs. 2018
The increase in revenues in fiscal 2019 was primarily due to:

- + $4.7 billion in licensing revenues recorded in the third quarter of fiscal 2019 resulting from the settlement with Apple and its contract manufacturers (which were not allocated to our segment results)
- \- $2.7 billion in lower equipment and services revenues from our QCT segment
- \- $451 million in lower licensing revenues from our QTL segment

2018 vs. 2017
The increase in revenues in fiscal 2018 was primarily due to:

- + $962 million reduction to licensing revenues recorded in fiscal 2017 related to the BlackBerry arbitration (which was not allocated to our segment results)
- + $745 million in higher equipment and services revenues from our QCT segment
- \- $1.4 billion in lower licensing revenues from our QTL segment
- \- $100 million reduction to licensing revenues recorded in fiscal 2018 related to a portion of a business arrangement that resolved a legal dispute (which was not allocated to our segment results)

Costs and Expenses (in millions, except percentages)

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Cost of revenues	$ 8,599	$ 10,244	$ 9,792	$ (1,645)	$ 452
Gross margin	65 %	55 %	56 %		

2019 vs. 2018
The increase in margin percentage in fiscal 2019 was primarily due to:

- + higher licensing revenues resulting from the settlement with Apple and its contract manufacturers in fiscal 2019

2018 vs. 2017
The decrease in margin percentage in fiscal 2018 was primarily due to:

- \- decrease in higher margin QTL licensing revenues as a proportion of total revenues
- \- reduction to licensing revenues recorded in fiscal 2018 related to a portion of a business arrangement that resolved a legal dispute
- + reduction to licensing revenues recorded in fiscal 2017 related to the BlackBerry arbitration

Our margin percentage may continue to fluctuate in future periods depending on the mix of segment results as well as products sold, competitive pricing, new product introduction costs and other factors, including disputes and/or resolutions with licensees and/or governmental investigations or proceedings, including the lawsuit filed against us by the FTC.

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Research and development	$ 5,398	$ 5,625	$ 5,485	$ (227)	$ 140
% of revenues	22 %	25 %	25 %		

2019 vs. 2018
The dollar decrease in research and development expenses in fiscal 2019 was primarily due to:

- \- $221 million decrease primarily driven by actions taken under our Cost Plan, partially offset by higher share-based compensation expense and higher employee cash incentive programs

2018 vs. 2017
The dollar increase in research and development expenses in fiscal 2018 was primarily due to:

- \+ $168 million, net of cost decreases driven by actions taken under our Cost Plan, in higher costs related to the development of wireless and integrated circuit technologies, including 5G technologies and RFFE technologies from the formation of RF360 Holdings in the second quarter of fiscal 2017
- \- $30 million impairment charge on certain intangible assets recorded in fiscal 2017

In fiscal 2018, all of the costs ($474 million) related to pre-commercial research and development of 5G technologies were included in unallocated corporate research and development expenses. Beginning in fiscal 2019, all research and development costs associated with 5G technologies were included in segment results. Additionally, beginning in fiscal 2019, certain research and development costs associated with early research and development that were historically included in our QCT segment were allocated to our QTL segment. The net effect of these changes negatively impacted QTL's EBT by $489 million in fiscal 2019 and positively impacted QCT's EBT by $160 million in fiscal 2019.

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Selling, general and administrative	$ 2,195	$ 2,986	$ 2,658	$ (791)	$ 328
% of revenues	9 %	13 %	12 %		

2019 vs. 2018
The dollar decrease in selling, general and administrative expenses in fiscal 2019 was primarily due to:

- \- $287 million in lower professional fees and costs, primarily driven by Broadcom's withdrawn takeover proposal in fiscal 2018 and our then proposed acquisition of NXP Semiconductors N.V. (NXP) in fiscal 2018
- \- $235 million in lower litigation costs, primarily resulting from the settlement of our prior dispute with Apple and its contract manufacturers and the end of the District Court trial in the lawsuit filed against us by the FTC
- \- $162 million in lower employee-related expenses, primarily driven by actions taken under our Cost Plan
- \- $75 million in lower sales and marketing expenses, primarily driven by actions taken under our Cost Plan

2018 vs. 2017
The dollar increase in selling, general and administrative expenses in fiscal 2018 was primarily due to:

- \+ $325 million in higher litigation costs, with total litigation costs of $554 million and $229 million in fiscal 2018 and fiscal 2017, respectively
- \+ $45 million in bad debt expense recorded in fiscal 2018
- \+ $42 million in higher professional fees and costs related to other legal matters, which was primarily driven by Broadcom's withdrawn takeover proposal, partially offset by lower third-party acquisition and integration services fees
- \- $40 million in lower amortization expense, primarily from the formation of RF360 Holdings
- \- $37 million in lower share-based compensation expense, primarily due to actions taken under our Cost Plan

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Other	$ 414	$ 3,135	$ 1,742	$ (2,721)	$ 1,393

2019

Other expenses in fiscal 2019 consisted of:

+ $275 million charge related to the 2019 EC fine
+ $213 million net charges related to our Cost Plan
- $43 million gain due to the partial recovery of a fine imposed in fiscal 2009 resulting from our appeal of the Korea Fair Trade Commission (KFTC) decision
- $31 million gain related to a favorable legal settlement

2018

Other expenses in fiscal 2018 consisted of:

+ $2.0 billion charge related to a fee in connection with the termination of a purchase agreement to acquire NXP

+ $1.2 billion charge related to a fine imposed by the EC
+ $629 million in restructuring and restructuring-related charges related to our Cost Plan
- $676 million benefit related to the settlement of the Taiwan Fair Trade Commission (TFTC) investigation

2017

Other expense in fiscal 2017 consisted of:

+ $927 million charge related to the KFTC fine, including related foreign currency losses
+ $778 million charge related to the TFTC fine
+ $37 million in restructuring and restructuring-related charges related to our 2015 Strategic Realignment Plan

Interest Expense and Investment and Other Income, Net (in millions)

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Interest expense	$ 627	$ 768	$ 494	$ (141)	$ 274
Investment and other income, net					
Interest and dividend income	$ 316	$ 625	$ 619	$ (309)	$ 6
Net gains on marketable securities	288	41	456	247	(415)
Net gains on other investments	68	83	74	(15)	9
Impairment losses on marketable securities and other investments	(135)	(75)	(177)	(60)	102
Net (losses) gains on derivative instruments	(14)	(27)	32	13	(59)
Equity in net losses of investees	(93)	(145)	(74)	52	(71)
Net gains (losses) on foreign currency transactions	11	37	(30)	(26)	67
	$ 441	$ 539	$ 900	$ (98)	$ (361)

In the fourth quarter of fiscal 2018, we implemented a stock repurchase program to repurchase up to $30 billion of our outstanding common stock. Stock repurchases made under this program have significantly reduced the amount of our cash, cash equivalents and marketable securities, resulting in a decrease to interest and dividend income in fiscal 2019. The increase in net gains on marketable securities in fiscal 2019 was primarily driven by gains resulting from the initial public offering of certain non-marketable equity investments.

The increase in interest expense in fiscal 2018 was primarily due to the issuance of an aggregate principal amount of $11.0 billion of unsecured floating- and fixed-rate notes in May 2017, of which $4.0 billion were repaid between May and August 2018.

In the first quarter of fiscal 2017, we began divesting a substantial portion of our marketable securities portfolio in order to finance, in part, the then proposed acquisition of NXP. As a result, we recorded net realized gains and impairment losses on such marketable securities that we sold and expected to sell before their anticipated recovery, respectively, in fiscal 2017.

Income Tax Expense (in millions. except percentages)

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Income tax expense	$ 3,095	$ 5,356	$ 543	$ (2,261)	$ 4,813
Effective tax rate	41 %	N/M	18 %		

N/M - Not meaningful

The following table summarizes the primary factors that caused our annual tax provision to differ from the expected income tax provision at the United States federal statutory rate (in millions):

	2019	2018	2017
Expected income tax provision at federal statutory tax rate	$ 1,571	$ 97	$ 1,045
State income tax provision, net of federal benefit	10	2	8
Derecognition of deferred tax asset on distributed intellectual property	2,472	—	—
Benefits from establishing new U.S. net deferred tax assets	(570)	—	—
Benefits from foreign-derived intangible income (FDII) deduction	(419)	—	—
Benefits related to the research and development tax credit	(110)	(136)	(81)
Benefits from foreign income taxed at other than U.S. rates	(54)	(834)	(963)
Nondeductible charges (reversals) related to the EC, KFTC and TFTC investigations	51	(119)	363
Impact of changes in tax reserves and audit settlements for prior year tax positions	20	—	111
Taxes on undistributed foreign earnings	8	87	—
Toll Charge from U.S. tax reform	—	5,236	—
Valuation allowance on deferred tax asset related to NXP termination fee	—	494	—
Remeasurement of deferred taxes due to changes in statutory rate due to U.S. tax reform	—	443	—
Other	116	86	60
Income tax expense	$ 3,095	$ 5,356	$ 543

The 2017 Tax Cuts and Jobs Act (the Tax Legislation), which was enacted during the first quarter of fiscal 2018, significantly revised the United States corporate income tax by, among other things, lowering the corporate income tax rate to 21% and imposing a one-time repatriation tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (the Toll Charge). The Tax Legislation fundamentally changed the taxation of multinational entities, including a shift from a system of worldwide taxation with deferral to a hybrid territorial system, featuring a participation exemption regime with current taxation of certain foreign income, a minimum tax on low-taxed foreign earnings and new measures to deter base erosion and promote U.S. production. As a fiscal-year taxpayer, certain provisions of the Tax Legislation became effective starting at the beginning of fiscal 2019, including GILTI (global intangible low-taxed income), a new tax on income of foreign corporations, BEAT (base-erosion and anti-abuse tax) and FDII (foreign-derived intangible income). In response to the Tax Legislation and to better align our profits with our activities, we implemented certain tax restructuring in fiscal 2018 and 2019. As a result, beginning in fiscal 2019, substantially all of our income is in the U.S., of which a significant portion qualifies for preferential treatment as FDII at a 13% effective tax rate. The impact of GILTI and BEAT is negligible. Accordingly, our annual effective tax rate for fiscal 2019 reflected the effects of these provisions of the Tax Legislation. Our annual effective tax rate for fiscal 2018 reflected a blended federal statutory rate of approximately 25%.

As a result of the Tax Legislation, in fiscal 2019, several of our foreign subsidiaries made tax elections to be treated as U.S. branches for federal income tax purposes (commonly referred to as "check-the-box" elections) effective beginning in fiscal 2018 and 2019. As a result of making these check-the-box elections, we recorded a tax benefit of $570 million in fiscal 2019. Additionally, in fiscal 2019, the United States Treasury Department issued new temporary regulations that resulted in a change to the deductibility of dividend income received by a U.S. stockholder from a foreign corporation. As a result of this change, pursuant to an agreement with the Internal Revenue Service, we relinquished the federal tax basis step-up of intellectual property that was distributed in fiscal 2018 by one of our foreign subsidiaries to a U.S. subsidiary. Therefore, the related deferred tax asset was derecognized, resulting in a $2.5 billion charge to income tax expense in fiscal 2019.

Income tax expense for fiscal 2019 also reflected benefits from our FDII deduction (including the impact of the Apple settlement) and research and development credits, as well as the impact of the 2019 EC fine, which is not deductible for tax purposes.

In fiscal 2018, as a result of the Tax Legislation, we recorded a charge of $5.7 billion to income tax expense, comprised of $5.2 billion related to the estimated Toll Charge and $438 million resulting from the remeasurement of U.S. deferred tax assets and liabilities that existed at the end of fiscal 2017 at a lower enacted corporate income tax rate, which included a $135 million tax benefit in fiscal 2018 related to the remeasurement of a U.S. deferred tax liability that was established as a result of a change in one of our positions due to the Tax Legislation.

Income tax expense for fiscal 2018 was also impacted by the charge recorded in the fourth quarter of fiscal 2018 related to the termination fee paid to NXP, which did not result in a tax benefit after the consideration of realizability of such loss. Fiscal 2018 and 2017 income tax expense was impacted by the EC, KFTC and TFTC fines, and settlement with the TFTC, which were not deductible for tax purposes (or taxable in the case of the settlement) and portions of which were attributable to foreign jurisdictions and to the United States. These impacts were partially offset in fiscal 2018 and 2017 by lower U.S. revenues primarily related to decreased royalty revenues from Apple's contract manufacturers and, for fiscal 2017, a payment to BlackBerry in connection with an arbitration decision.

Income tax expense for fiscal 2017 also reflected the increase in our Singapore tax rate as a result of the expiration of certain of our tax incentives in March 2017, which was substantially offset by tax benefits resulting from the increase in our Singapore tax rate in effect when certain deferred tax assets reversed. During the third quarter of fiscal 2018, we entered into a new tax incentive agreement in Singapore that results in a reduced tax rate from March 2017 through March 2022, provided that we meet specified employment and investment criteria in Singapore. Our Singapore tax rate will increase in March 2022 as a result of expiration of these incentives and again in March 2027 upon the expiration of tax incentives under a prior agreement. Without these tax incentives, our fiscal 2018 income tax expense would have been higher. During fiscal 2018, one of our Singapore subsidiaries distributed certain intellectual property to a U.S. subsidiary, substantially reducing the benefit of these tax incentives going forward.

Unrecognized tax benefits were $1.7 billion and $217 million at September 29, 2019 and September 30, 2018, respectively. The increase in unrecognized tax benefits in fiscal 2019 was primarily due to our plan to apply for a refund of Korean withholding tax (which had an insignificant impact to our income tax provision) as a result of recent court rulings in Korea, among other factors. If successful, the refund will result in a corresponding reduction in U.S. foreign tax credits. We are subject to income taxes in the United States and numerous foreign jurisdictions and are currently under examination by various tax authorities worldwide, primarily related to transfer pricing. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. As of September 29, 2019, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Segment Results

The following should be read in conjunction with the fiscal 2019, 2018 and 2017 results of operations for each reportable segment included in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information."

QCT Segment (in millions, except percentages)

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Revenues					
Equipment and services	$ 14,318	$ 17,060	$ 16,315	$ (2,742)	$ 745
Licensing	321	222	164	99	58
Total revenues	$ 14,639	$ 17,282	$ 16,479	$ (2,643)	$ 803
EBT (1)	$ 2,143	$ 2,966	$ 2,747	$ (823)	$ 219
EBT as a % of revenues	15%	17%	17%	(2%)	—%

(1) Earnings (loss) before taxes.

Beginning in fiscal 2019, we combined our Small Cells business, which sells products designed for the implementation of small cells to address the challenge of meeting the increased demand for mobile data, into our QCT segment. Revenues and operating results related to the Small Cells business were included in nonreportable segments through the end of fiscal 2018. Prior period segment information has not been adjusted to conform to the new segment presentation as such adjustments are insignificant.

Equipment and services revenues mostly relate to sales of Mobile Station Modem (MSM™), Radio Frequency (RF), Power Management (PM) and wireless connectivity integrated circuits. MSM integrated circuits include our stand-alone Mobile Data Modems and Snapdragon platforms, including processors and modems. Approximately 650 million, 855 million and 804 million MSM integrated circuits were sold during fiscal 2019, 2018 and 2017, respectively.

2019 vs. 2018

The decrease in QCT equipment and services revenues was primarily due to:

- \- $2.7 billion in lower MSM and accompanying unit shipments, primarily driven by lower modem sales to Apple and a decline in demand from OEMs in China
- \- $515 million in lower connectivity product revenues, primarily driven by a decline in demand for Wi-Fi and Bluetooth products from OEMs in China
- \+ $552 million in higher revenues per MSM and accompanying unit shipment, primarily driven by a favorable shift in mix related to our premium-tier products

QCT EBT as a percentage of revenues decreased in fiscal 2019 primarily due to:

- \- lower QCT revenues
- \+ decrease in operating expenses, primarily driven by a decrease in the amount of research and development expense allocated to QCT in fiscal 2019 and actions under our Cost Plan

QCT accounts receivable decreased by 33% in fiscal 2019 from $1.36 billion to $908 million, primarily due to the decrease in revenues, as well as the impact of settling certain receivables in connection with the settlement agreements with Apple and its contract manufacturers. QCT inventories decreased by 17% in fiscal 2019 from $1.68 billion to $1.40 billion, primarily due to a decrease in the overall quantity of units on hand.

2018 vs. 2017

The increase in QCT equipment and services revenues in fiscal 2018 was primarily due to:

- \+ $825 million in higher RFFE product revenues primarily related to revenues from RF360 Holdings, which was formed in the second quarter of fiscal 2017, and reflected the impact of eliminating a one-month reporting lag in fiscal 2018
- \+ $737 million in higher MSM and accompanying unit shipments primarily driven by higher demand from OEMs in China, partially offset by a decline in share at Apple
- \- $719 million decrease due to lower average selling prices and unfavorable product mix
- \- $83 million in lower connectivity product revenues

QCT EBT as a percentage of revenues remained flat in fiscal 2018 primarily due to an unchanged gross margin percentage, driven by the net effect of lower average selling prices and lower-margin product mix, offset by lower average unit costs.

QTL Segment (in millions, except percentages)

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Licensing revenues	$ 4,591	$ 5,042	$ 6,412	$ (451)	$ (1,370)
EBT	$ 2,954	$ 3,404	$ 5,142	$ (450)	$ (1,738)
EBT as a % of revenues	64 %	68 %	80 %	(4 %)	(12 %)

QTL results in fiscal 2019 reflected the adoption of new revenue recognition guidance that requires us to estimate and recognize QTL royalties in the period in which the associated sales occur, resulting in an acceleration of royalty revenues by one quarter as compared to prior periods. Prior period results have not been adjusted for the adoption of the new accounting guidance.

As a result of the settlement with Apple and its contract manufacturers, QTL results for fiscal 2019 included royalties from Apple and its contract manufactures for sales made in the June 2019 and September 2019 quarters. Revenues in the first six months of fiscal 2019 and all of fiscal 2018 did not include royalties due on sales of Apple or other products by Apple's contract manufacturers.

QTL revenues in fiscal 2019 included $450 million of royalties due under a second interim agreement with Huawei that concluded in the third quarter of fiscal 2019, and although negotiations continue, we have not reached a final agreement with Huawei. We did not record any revenues in the fourth quarter of fiscal 2019 for royalties due on the sales of Huawei's products. QTL revenues in fiscal 2018 included $600 million paid under an interim agreement with Huawei for royalties due after the second quarter of fiscal 2017. These payments represent minimum, non-refundable amounts for royalties due and do not reflect the full amount of royalties due under the underlying license agreement.

We did not record any revenues in the third or fourth quarter of fiscal 2017 for royalties due on the sales of Apple or other products by Apple's contract manufacturers and Huawei's products, and Huawei underpaid royalties due in the second quarter of fiscal 2017, which negatively impacted QTL revenues. Royalty revenues related to the products of Apple's contract manufacturers and Huawei were approximately $1.7 billion in fiscal 2017.

2019 vs. 2018
QTL licensing revenues in fiscal 2019, which primarily related to royalties due on sales made by our licensees in the December 2018, March 2019, June 2019 and September 2019 quarters, decreased compared to licensing revenues in fiscal 2018, which primarily related to royalties due on sales made by our licensees in the September 2017, December 2017, March 2018 and June 2018 quarters, primarily due to:

- $757 million in lower estimated revenues per unit compared to revenues per reported unit, in part reflecting licensees entering into new 5G multimode license agreements with rights to our cellular standard-essential patents only (compared to previous licenses which also included rights to certain other non-cellular essential patents), and decreases in our per unit royalty caps

- $150 million in lower royalty revenues from Huawei under the interim agreements

+ $484 million increase in estimated sales of 3G/4G/5G-based products (including multimode products) compared to reported sales of 3G/4G-based products, primarily due to the new license agreement with Apple, partially offset by a decline in unit demand and a shift in OEM share towards Huawei

QTL EBT as a percentage of revenues decreased in fiscal 2019 primarily due to:

- higher research and development costs due to an increase in the amount of research and development expense allocated to QTL in fiscal 2019

- lower QTL revenues

+ lower selling, general and administrative expenses, primarily from lower litigation costs and lower bad debt expense

QTL accounts receivable increased by 5% in fiscal 2019 from $1.47 billion to $1.54 billion, primarily due to the adoption of the new revenue recognition guidance, partially offset by the impact of settling approximately $960 million of receivables that were related to the short payment in the second quarter of fiscal 2017 of royalties due from Apple’s contract manufacturers in connection with the settlement agreements with Apple and its contract manufacturers.

2018 vs. 2017
Excluding the impact of the prior dispute with Apple and its contract manufacturers, as well as the dispute with Huawei, QTL licensing revenues in fiscal 2018 further decreased primarily due to:

- $177 million in lower royalty revenues recognized related to devices sold in prior periods from certain other licensees

QTL EBT as a percentage of revenue decreased in fiscal 2018 primarily due to:

- higher selling, general and administrative expenses resulting primarily from higher litigation costs

- lower QTL revenues

QSI Segment (in millions)

	2019	2018	2017	2019 vs. 2018 Change	2018 vs. 2017 Change
Equipment and services revenues	$ 152	$ 100	$ 113	$ 52	$ (13)
EBT	$ 344	$ 24	$ 65	$ 320	$ (41)

2019 vs. 2018
The increase in QSI EBT in fiscal 2019 was primarily due to:

+ $270 million increase in net gains on investments, primarily driven by gains resulting from the initial public offering of certain non-marketable equity investments

+ $91 million increase resulting from higher revenues and lower costs associated with certain development contracts with an equity method investee

- $41 million increase in impairment losses on investments, primarily related to an equity method investee

QSI segment assets, which primarily consist of marketable and non-marketable equity investments, increased by 34% in fiscal 2019 from $1.28 billion to $1.71 billion, primarily due to recording certain non-marketable equity investments at fair value upon becoming publicly traded and acquiring non-marketable equity investments.

2018 vs. 2017

The decrease in QSI EBT in fiscal 2018 was primarily due to:

- $14 million decrease in net gains on investments
- $14 million increase in our share of losses in equity method investments
- $13 million decrease resulting from lower revenues from certain development contracts with one of our equity method investees

Looking Forward

In the coming years, we expect consumer demand for 3G/4G multimode and 4G products and services to decline as new consumer demand for 3G/4G/5G multimode and 5G products and services ramp around the world. We expect growth in new device categories and industries, resulting from the expanding adoption of certain technologies that are already commonly used in smartphones by industry segments outside traditional cellular industries, such as automotive, computing, IoT and networking.

As we look forward to the next several months and beyond, we expect our business to be impacted by the following key items:

- In May 2019, in *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated*, the court issued an Order ruling against us and imposing certain injunctive relief. We disagree with the court's conclusions, interpretation of the facts and application of the law. Accordingly, we filed a motion to stay certain of the remedies with, and have appealed the decision to, the Ninth Circuit Court of Appeals (Ninth Circuit). In August 2019, our partial motion to stay was granted in its entirety by the Ninth Circuit. Regulatory authorities in certain jurisdictions have investigated our business practices and instituted proceedings against us, and they or other regulatory authorities may do so in the future. Additionally, certain of our direct and indirect customers and licensees have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, financial condition and cash flows. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others, the loss of our ability to enforce one or more of our patents; injunctions; monetary damages or fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed OEMs or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. These activities have required, and we expect that they will continue to require, the investment of significant management time and attention and have resulted, and we expect that they will continue to result, in increased legal costs until the respective matters are resolved. See "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies" and "Part I, Item 1A. Risk Factors" included in this Annual Report, including the Risk Factors entitled "Efforts by some communications equipment manufacturers or their customers to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business," "Our business, particularly our licensing business, may suffer as a result of adverse rulings in government investigations or proceedings" and "Changes in our patent licensing practices, whether due to governmental investigations or private legal proceedings challenging those practices, or otherwise, could adversely impact our business and results of operations."

- In fiscal 2019, we entered into a second interim agreement with Huawei under which we recognized $450 million of royalty revenues in fiscal 2019. These payments do not reflect the full amount of royalties due under the underlying license agreement. The second interim agreement concluded in the third quarter of fiscal 2019, and although negotiations continue, we have not reached a final agreement with Huawei. We did not record any revenues in the fourth quarter of fiscal 2019 for royalties due on the sales of Huawei's products. If no agreement is reached, Huawei may not make any other payments or may not make full payments due under the underlying license agreement, which may result in significant legal costs and will negatively impact our future revenues, as well as our financial condition, results of operations and cash flows, until the dispute is resolved.

- We expect our business, particularly QCT, to continue to be impacted by industry dynamics, including:

    - Increased concentration of device share among a few companies, particularly within the premium tier, resulting in significant supply chain leverage for those companies, and exacerbating the negative impact to our business and financial results to the extent those companies do not utilize our chipsets. For example, Huawei has taken, and we believe will continue to take, share in China from other Chinese OEMs, negatively impacting QCT as we sell a limited number of chipsets to Huawei as compared to many of those other OEMs, and the negative impact to our overall business of Huawei share gains at the expense of other Chinese OEMs may be further exacerbated if Huawei continues to not pay us royalties or does not make full payment due to us under its license agreement;

- Decisions by companies to utilize their own internally-developed integrated circuit products and/or sell such products to others, including by selling them together with certain of their other products;

- Decisions by certain companies to utilize our competitors' integrated circuit products in all or a portion of their devices. For example, we have not been the sole supplier of modems for iPhone products beginning with products that launched in September 2016, as Apple utilizes modems from one of our competitors in a portion of such devices. Apple is solely using one of our competitors' modems, rather than our modems, in its 2019 iPhone release. For new chipset models, QCT does not expect to begin recording revenues under our recently announced multi-year chipset agreement with Apple until the second half of fiscal 2020;

  - Intense competition, particularly in China, as our competitors expand their product offerings and/or reduce the prices of their products as part of a strategy to attract new and/or retain existing customers;

  - Slow-down in handset demand as the industry transitions from 4G to 5G and continued reduction in demand in developed regions and China;

  - Lengthened handset replacement cycles and consumer demand, which is increasingly driven by new product launches and/or innovation cycles; and

  - Continued growth of device share by Chinese OEMs in China and in regions outside of China.

- Current U.S./China trade relations and/or national security protection policies may negatively impact our business, growth prospects and results of operations.

- Initial commercial 5G network deployments and device launches have begun and will continue into fiscal 2020 and beyond. We believe that 5G technologies will empower a new era of smartphones and connected devices. We also believe that 5G will drive transformation across industries beyond traditional cellular communications that will create new business models and new services. We believe it is important that we remain a leader in 5G technology development, standardization, intellectual property creation and licensing of 5G technologies, and to be a leading developer and supplier of 5G integrated circuit products in order to sustain and grow our business long term.

- We continue to invest significant resources to develop our wireless baseband chipsets, and our converged computing/communications (Snapdragon) chipsets, which incorporate technologies in the following areas, among others: advancements in 4G and 5G, OFDM-based Wi-Fi, RF, connectivity, power management, graphics, audio and video codecs, multimedia, artificial intelligence and virtual/augmented reality, and all of which contribute to the expansion of our intellectual property portfolio. We are also investing in targeted opportunities that leverage our existing technical and business expertise to deploy new business models and enter and/or expand into new industry segments and applications, such as products for automotive, computing, IoT (including the connected home, smart cities, wearables, voice and music and robotics) and networking, among others.

In addition to the foregoing business and market-based matters, we continue to devote resources to working with and educating participants in the wireless value chain and governments as to the benefits of our licensing program and our extensive technology investments in promoting a highly competitive and innovative wireless industry. However, we expect that certain companies may continue to be dissatisfied with the need to pay reasonable royalties for the use of our technology and not welcome the success of our licensing program in enabling new, highly cost-effective competitors to their products. Accordingly, such companies, and/or governments or regulators, may continue to challenge our business model in various forums throughout the world.

Further discussion of risks related to our business is presented in "Part I, Item 1A. Risk Factors" included in this Annual Report.

Liquidity and Capital Resources

Our principal sources of liquidity are our existing cash, cash equivalents and marketable securities, cash generated from operations and cash provided by our debt programs. The following table presents selected financial information related to our liquidity as of and for the years ended September 29, 2019 and September 30, 2018 (in millions, except percentages):

	2019	2018	$ Change	% Change
Cash, cash equivalents and marketable securities	$ 12,296	$ 12,123	$ 173	1 %
Accounts receivable, net	2,471	2,904	(433)	(15 %)
Inventories	1,400	1,693	(293)	(17 %)
Short-term debt	2,496	1,005	1,491	148 %
Long-term debt	13,437	15,365	(1,928)	(13 %)
Net cash provided by operating activities	7,286	3,908	3,378	86 %
Net cash (used) provided by investing activities	(806)	2,381	(3,187)	(134 %)
Net cash used by financing activities	(6,386)	(31,500)	25,114	(80 %)

The net increase in cash, cash equivalents and marketable securities was primarily due to net cash provided by operating activities and $414 million in proceeds from issuance of common stock, partially offset by $3.0 billion in cash dividends paid, $1.8 billion in payments to repurchase shares of our common stock, a $1.2 billion payment of purchase consideration related to RF360 Holdings, $887 million in capital expenditures, $503 million in net repayments under our commercial paper program and $266 million in payments of tax withholdings related to the vesting of share-based awards. The net increase in total cash provided by operating activities reflected the settlement with Apple and its contract manufacturers, as well as lower segment revenues and the impact of timing of payments of customer-related liabilities.

Our days sales outstanding, on a consolidated basis, increased to 47 days at September 29, 2019 compared to 30 days at September 30, 2018. The increase in days sales outstanding was primarily due to the adoption of the new revenue recognition guidance in fiscal 2019. The decrease in accounts receivable was primarily due to the settlement with Apple and its contract manufacturers and a decrease in integrated circuit shipments, partially offset by the adoption of the new revenue recognition guidance in fiscal 2019. The decrease in inventories was primarily due to a decrease in the overall quantity of units on hand to align with near-term demand.

Debt. In May 2017, we issued an aggregate principal amount of $11.0 billion in nine tranches of unsecured floating- and fixed-rate notes, of which $7.0 billion remains outstanding with maturity dates in 2023 through 2047. Effective interest rates were between 2.70% and 4.47% at September 29, 2019. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes.

In May 2015, we issued an aggregate principal amount of $10.0 billion in eight tranches of unsecured floating- and fixed-rate notes, of which $8.5 billion remains outstanding with maturity dates in 2020 through 2045. Effective interest rates were between 2.64% and 4.73% at September 29, 2019. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes.

Our Revolving Credit Facility provides for unsecured revolving facility loans, swing line loans and letters of credit in the aggregate amount of up to $5.0 billion, of which $530 million and $4.47 billion will expire in February 2020 and November 2021, respectively. At September 29, 2019, no amounts were outstanding under the revolving credit facility.

We have an unsecured commercial paper program, which provides for the issuance of up to $5.0 billion of commercial paper. Net proceeds from this program are used for general corporate purposes. At September 29, 2019, we had $499 million of commercial paper outstanding with a weighted-average net interest rate of 2.17% and weighted-average remaining days to maturity of 41 days.

We may issue additional debt in the future. The amount and timing of such additional borrowings will be subject to a number of factors, including acquisitions and strategic investments, acceptable interest rates and changes in corporate income tax law, among other factors.

Additional information regarding our outstanding debt at September 29, 2019 is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 6. Debt."

Income Taxes. The Tax Legislation, which was signed into law during the first quarter of fiscal 2018, resulted in a $5.2 billion charge recognized in fiscal 2018 related to the Toll Charge. After application of certain tax credits (including excess tax credits generated in fiscal 2019), the total cash payment is expected to be $2.5 billion. The first payment was made in

January 2019. At September 29, 2019, we estimated future cash payments of $2.3 billion, payable in installments over the next seven years. At September 29, 2019, $209 million was included in other current liabilities, reflecting our next installment due in January 2020.

Additional information regarding our income taxes is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 3. Income Taxes."

Capital Return Program. The following table summarizes stock repurchases, before commissions, and dividends paid during fiscal 2019, 2018 and 2017 (in millions, except per-share amounts):

	Stock Repurchase Program			Dividends		Total
	Shares	**Average Price Paid Per Share (1)**	**Amount**	**Per Share**	**Amount**	**Amount**
2019	95.8	$ 66.18	$ 1,793	$ 2.48	$ 2,968	$ 4,761
2018	278.8	65.41	22,569	2.38	3,466	26,035
2017	22.8	58.87	1,342	2.20	3,252	4,594

(1) Average Price Paid Per Share in fiscal 2018 and 2019 excludes the impact of the three accelerated share repurchase agreements (the ASR Agreements) executed in September 2018 and completed in September 2019. The average price per share under the ASR Agreements was $64.76.

In fiscal 2018, we announced a stock repurchase program authorizing us to repurchase up to $30.0 billion of our common stock. In fiscal 2018, we entered into the ASR Agreements to repurchase an aggregate of $16.0 billion of our common stock, with 178.4 million shares initially delivered to us under the ASR Agreements and retired. The ASR Agreements were completed during the fourth quarter of fiscal 2019, and an additional 68.7 million shares were delivered to us, comprising the final delivery of shares under the ASR Agreements. In total, 247.1 million shares were delivered to us under the ASR Agreements. In fiscal 2019, we repurchased and retired an additional 27.1 million shares of our common stock for $1.8 billion, before commissions. At September 29, 2019, $7.1 billion remained authorized for repurchase under the stock repurchase program. Since September 29, 2019, we repurchased and retired 3.9 million shares of common stock for $300 million.

Our stock repurchase program has significantly reduced and we expect that it will continue to reduce the amount of cash that we have available to fund our operations including research and development, working capital, capital expenditures, acquisitions, investments, dividends and other corporate purposes; and increases our exposure to adverse economic, market, industry and competitive conditions and developments, and other changes in our business and our industry. This stock repurchase program has no expiration date. However, we periodically evaluate repurchases as a means of returning capital to stockholders to determine when and if repurchases are in the best interests of our stockholders and may accelerate, suspend, delay or discontinue repurchases at any time.

On October 15, 2019, we announced a cash dividend of $0.62 per share on our common stock, payable on December 19, 2019 to stockholders of record as of the close of business on December 5, 2019. We intend to continue to use cash dividends as a means of returning capital to stockholders, subject to capital availability and our view that cash dividends are in the best interests of our stockholders, among other factors.

Additional Capital Requirements. We believe our cash, cash equivalents and marketable securities, our expected cash flow generated from operations and our expected financing activities will satisfy our working and other capital requirements for at least the next 12 months based on our current business plans. Recent and expected working and other capital requirements, in addition to the above matters, also include the items described below:

- Our purchase obligations at September 29, 2019, some of which relate to research and development activities and capital expenditures, totaled $2.9 billion and $286 million for fiscal 2020 and 2021, respectively, and $178 million thereafter.

- Our research and development expenditures were $5.4 billion in fiscal 2019 and $5.6 billion in fiscal 2018, and we expect to continue to invest heavily in research and development for new technologies, applications and services for voice and data communications.

- Cash outflows for capital expenditures were $887 million in fiscal 2019 and $784 million in fiscal 2018. We expect to continue to incur capital expenditures in the future to support our business, including research and development activities.

- At September 29, 2019, $1.4 billion was accrued related to two fines imposed by the EC (based on the exchange rate at September 29, 2019, including related foreign currency gains and accrued interest). We have provided financial guarantees in lieu of cash payment to satisfy the obligations while we appeal the EU's decisions.
- We expect to continue making strategic investments and acquisitions, the amounts of which could vary significantly, to open new opportunities for our technologies, obtain development resources, grow our patent portfolio or pursue new businesses.

Further, regulatory authorities in certain jurisdictions have investigated our business practices and instituted proceedings against us, including the lawsuit filed against us by the FTC, in which a ruling was issued in favor of the FTC in May 2019, and they or other regulatory authorities may do so in the future. Additionally, certain of our direct and indirect customers and licensees, have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, financial condition and cash flows. See "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies" and "Part I, Item 1A. Risk Factors" in this Annual Report.

Contractual Obligations/Off-Balance Sheet Arrangements

We have no significant contractual obligations not fully recorded on our consolidated balance sheets or fully disclosed in the notes to our consolidated financial statements. We have no material off-balance sheet arrangements as defined in Regulation S-K 303(a)(4)(ii).

The following table summarizes the payments due by fiscal period for our outstanding contractual obligations at September 29, 2019 (in millions):

	Total	2020	2021-2022	2023-2024	Beyond 2024	No Expiration Date
Purchase obligations (1)	$ 3,390	$ 2,926	$ 394	$ 69	$ 1	$ —
Operating lease obligations	385	138	163	49	35	—
Capital lease obligations (2)	28	17	11	—	—	—
Equity funding and financing commitments (3)	154	5	1	1	—	147
Long-term debt (4)	15,500	2,000	2,000	3,500	8,000	—
Other long-term liabilities (5)(6)	2,974	250	453	574	1,136	561
Total contractual obligations	$ 22,431	$ 5,336	$ 3,022	$ 4,193	$ 9,172	$ 708

(1) Purchase obligations primarily relate to integrated circuit product inventory obligations, which represent purchase commitments for raw materials, semiconductor die, finished goods and manufacturing services, such as wafer bump, probe, assembly and final test. Under our manufacturing relationships with our foundry suppliers and assembly and test service providers, cancelation of outstanding purchase commitments is generally allowed but requires payment of costs incurred through the date of cancelation, and in some cases, incremental fees related to capacity underutilization.

(2) Amounts represent future minimum lease payments including interest payments. Capital lease obligations were included in other current liabilities and other noncurrent liabilities in the consolidated balance sheet at September 29, 2019.

(3) Certain of these commitments do not have fixed funding dates and are subject to certain conditions and have, therefore, been presented as having no expiration date. Commitments represent the maximum amounts to be funded under these arrangements; actual funding may be in lesser amounts or not at all.

(4) The amounts noted herein represent contractual payments of principal only.

(5) Certain long-term liabilities reflected on our balance sheet, such as unearned revenues, are not presented in this table because they do not require cash settlement in the future. Other long-term liabilities as presented in this table include the related current portions, as applicable.

(6) Our consolidated balance sheet at September 29, 2019 included $1.6 billion in other noncurrent liabilities for uncertain tax positions, which primarily relate to a reduction of U.S. foreign tax credits that will occur if we are successful in our claim

for a refund of Korean withholding tax (for which a $1.4 billion receivable was recorded at September 29, 2019). The majority of this liability will be payable when we receive the Korean tax refund, with the remainder payable over periods up to and including the last payment of the Toll Charge in January 2026. The future payments related to uncertain tax positions recorded as other noncurrent liabilities have not been presented in the table above due to the uncertainty of the amounts and timing of cash settlement with the taxing authorities.

Additional information regarding our financial commitments at September 29, 2019 is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 3. Income Taxes," "Note 6. Debt" and "Note 7. Commitments and Contingencies."

Critical Accounting Estimates

The preparation of our consolidated financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and disclosure of contingent assets and liabilities. We base our estimates on historical and anticipated results and trends and on various other assumptions that we believe are reasonable under the circumstances, including assumptions as to future events. By their nature, estimates are subject to an inherent degree of uncertainty. Although we believe that our estimates and the assumptions supporting our assessments are reasonable, actual results that differ from our estimates could be material to our consolidated financial statements. A summary of our significant accounting policies is included in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies." We consider the following accounting estimates to be critical in the preparation of our consolidated financial statements.

Revenue Recognition. We derive revenues principally from sales of integrated circuit products and licensing of our intellectual property. We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Licensees pay royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets, laptops and smartwatches, and provide for a maximum royalty amount payable per device. We estimate and recognize sales-based royalties on such licensed products in the period in which the associated sales occur, subject to certain constraints on our ability to estimate such royalties. Our estimates of sales-based royalties are based largely on an assessment of the volume of devices supplied into the market that incorporate or use our licensed intellectual property. We estimate sales-based royalties taking into consideration the mix of such sales on a licensee-by-licensee basis, as well as the licensees' average wholesale prices of such products, and consider all information (historical, current and forecasted, which may include certain estimates from licensees) that is reasonably available to us. We also consider in our estimates of sales-based royalties any changes in pricing we plan or expect to make. Our licensees, however, do not report and pay royalties owed for sales in any given quarter until after the conclusion of that quarter, which is generally the following quarter. As a result of recognizing revenues in the period in which the licensees' sales occur using estimates, adjustments to revenues are required in subsequent periods to reflect changes in estimates as new information becomes available, primarily resulting from actual amounts reported by our licensees.

From time to time, regulatory authorities investigate our business practices, particularly with respect to our licensing business, and institute proceedings against us. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others, the loss of our ability to enforce one or more of our patents; injunctions; monetary damages or fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed OEMs or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. Additionally, from time to time, companies initiate various strategies in an attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property, which may include disputing, underreporting, underpaying, not reporting and/or not paying royalties owed to us under their license agreements with us, or reporting to us in a manner that is not in compliance with their contractual obligations. In such cases, we estimate and recognize licensing revenues only when we have a contract, as defined in the revenue recognition guidance, and to the extent it is probable that a significant reversal of cumulative revenues recognized will not occur, both of which may require significant judgment. We analyze the risk of a significant revenue reversal considering both the likelihood and magnitude of the reversal and, if necessary, constrain the amount of estimated revenues recognized in order to mitigate this risk, which may result in recognizing revenues less than amounts contractually owed to us.

In May 2019, in *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated*, the court issued an Order ruling against us and imposing certain injunctive relief (see "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies"). In August 2019, the U.S. Court of Appeals for the Ninth Circuit granted in its entirety Qualcomm's request for a partial stay of the injunction. While we believe that our business practices do not violate either antitrust law or our FRAND (fair, reasonable and non-discriminatory) licensing commitments, significant evaluation and judgment were required in determining the impact of such ruling on the amount of licensing revenues estimated and recognized in fiscal 2019. This included, among other items: (i) evaluating whether our license agreements remain valid and enforceable, (ii) evaluating licensees' conduct and whether they remain committed to perform their respective obligations and (iii) determining the expected impact, if any, to revenues of any license agreements that may be renegotiated and/or are newly entered into. Based on this evaluation, the impact of the ruling was not material to QTL licensing revenues in fiscal 2019 based on facts and factors currently known by us. As new information becomes available, we may be required to make adjustments to revenues in subsequent periods to reflect changes in estimates and/or this matter could have a material adverse effect on our ability to recognize future licensing revenues.

Impairment of Other Investments. We hold investments in non-marketable equity instruments in privately held companies, including those accounted for under the equity method. Non-marketable equity instruments do not have readily determinable fair values and are accounted for under the equity method or based on initial cost minus impairment, if any, plus or minus adjustments resulting from observable price changes in orderly transactions for identical or similar securities. Many of these investments are in early-stage companies, which are inherently risky because the markets for the technologies or products of these companies are uncertain and may never develop. We monitor our investments for events or circumstances that could indicate the investments are impaired, such as a deterioration in the investee's financial condition and business forecasts and lower valuations in recently completed or anticipated financings, and we record impairment losses in earnings when we believe an investment has experienced a decline in value (such decline in value must be considered other-than-temporary for equity method investments).

Valuation of Inventories. Inventories are valued at the lower of cost and net realizable value using the first-in, first-out method. Recoverability of inventories is assessed based on review of future customer demand that considers multiple factors, including committed purchase orders from customers as well as purchase commitment projections provided by customers, among other things. This valuation also requires us to make judgments and assumptions based on information currently available about market conditions, including competition, product pricing, product life cycle and development plans. As we move to smaller geometry process technologies, the manufacturing lead-time increases, resulting in an increased reliance on our own forecasts of customer demand, rather than our customers' forecasts. If we overestimate demand for our products, the amount of our loss will be impacted by our contractual ability to reduce inventory purchases from our suppliers. Our assumptions of future product demand are inherently uncertain, and changes in our estimates and assumptions may cause us to realize material write-downs in the future.

Valuation of Goodwill and Other Indefinite-Lived and Long-Lived Assets. Our business combinations typically result in the recording of goodwill, other intangible assets and/or property, plant and equipment, and the recorded values of those assets may become impaired in the future. We also acquire intangible assets and property, plant and equipment in other types of transactions. The determination of the recorded value of intangible assets acquired in a business combination requires management to make estimates and assumptions that affect our consolidated financial statements. For intangible assets acquired in a non-monetary exchange, the estimated fair values of the assets transferred (or the estimated fair values of the assets received, if more clearly evident) are used to establish their recorded values, unless the values of neither the assets received nor the assets transferred are determinable within reasonable limits, in which case the assets received are measured based on the carrying values of the assets transferred. Valuation techniques consistent with the market approach, income approach and/or cost approach are used to measure fair value. An estimate of fair value can be affected by many assumptions that require significant judgment. For example, the income approach generally requires us to use assumptions to estimate future cash flows including those related to total addressable market, pricing and share forecasts, competition, technology obsolescence, future tax rates and discount rates. Our estimate of the fair value of certain assets may differ materially from that determined by others who use different assumptions or utilize different business models and from the future cash flows actually realized.

Goodwill and other indefinite-lived intangible assets are tested annually for impairment and in interim periods if events or changes in circumstances indicate that the assets may be impaired. Long-lived assets, such as property, plant and equipment and intangible assets subject to amortization, are reviewed for impairment when events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Our judgments regarding the existence of impairment indicators and future cash flows related to goodwill and other indefinite-lived intangible assets and long-lived assets may be based on operational performance of our businesses, market conditions, expected selling price and/or other factors. Although there are inherent uncertainties in this assessment process, the estimates and assumptions we use, including estimates of future cash flows and discount rates, are consistent with our internal planning, when appropriate. If these estimates or their related assumptions change in the future, we may be required to record an impairment charge on a portion or all of our goodwill, other indefinite-lived intangible assets and/or long-lived assets. Furthermore, we cannot predict the occurrence of future impairment-triggering events nor the impact such events might have on our reported asset values. Future events could cause us to conclude that impairment indicators exist, and that goodwill or other long-lived assets associated with our acquired businesses are impaired. Any resulting impairment loss could have an adverse impact on our financial condition and results of operations. During fiscal 2019, 2018 and 2017, we recorded $203 million, $273 million and $76 million, respectively, in impairment charges for goodwill, other indefinite-lived intangible assets and long-lived assets. The estimated fair values of our QCT and QTL reporting units were substantially in excess of their respective carrying values at September 29, 2019.

Legal and Regulatory Proceedings. We are currently involved in certain legal and regulatory proceedings, and we intend to continue to vigorously defend ourselves. Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Investigations by antitrust and trade regulation agencies are not conducted in a consistent manner across jurisdictions. Further, each country and agency has different sets of laws, rules and regulations, both substantive and procedural, as well as different legal principles, theories and potential remedies, and some agencies may seek to use the investigation to advance domestic policy goals. Depending on the jurisdiction, these investigations can involve non-transparent procedures under which we may not receive access to evidence relied upon by the enforcement agency or that may be exculpatory and may not be informed of the specific legal theories or evidence considered or relied upon by the agency. Unlike in civil litigation in the United States, in foreign proceedings, we may not be entitled to discovery or depositions, allowed to cross-examine witnesses or confront our accusers. As a result, we may not be aware of, and may not be entitled to know, all allegations against us, or the information or documents provided to, or discovered or prepared by, the agency. Accordingly, we may have little or no idea what an agency's intent is with respect to liability, penalties or the timing of a decision. In many cases the agencies are given significant discretion, and any available precedent may have limited, if any, predictive value in their jurisdictions, much less in other jurisdictions. Accordingly, we cannot predict the outcome of these matters. However, the unfavorable resolution of one or more of these proceedings could have a material adverse effect on our business, results of operations, financial condition and/or cash flows. A broad range of remedies with respect to our business practices that are deemed to violate applicable laws are potentially available. These remedies may include, among others, injunctions, monetary damages or fines or other orders to pay money and the issuance of orders to cease certain conduct and/or to modify our business practices.

If there is at least a reasonable possibility that a material loss may have been incurred associated with pending legal and regulatory proceedings, we disclose such fact, and if reasonably estimable, we provide an estimate of the possible loss or range of possible loss. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of loss can be reasonably estimated with no best estimate in the range, we record the minimum estimated liability. As additional information becomes available, we assess the potential liability related to pending legal and regulatory proceedings and revise our estimates and update our disclosures accordingly. Significant judgment is required in both the determination of probability and the determination as to whether a loss is reasonably estimable. Revisions in our estimates of the potential liability could materially impact our results of operations.

Income Taxes. We are subject to income taxes in the United States and numerous foreign jurisdictions, and the assessment of our income tax positions involves dealing with uncertainties in the application of complex tax laws and regulations in various taxing jurisdictions. In addition, the application of tax laws and regulations is subject to legal and factual interpretation, judgment and uncertainty. Tax laws and regulations themselves are subject to change as a result of changes in fiscal policy, changes in legislation, the evolution of regulations and court rulings. Significant judgments and estimates are required in determining our provision for income taxes, including those related to special deductions such as FDII (foreign-derived intangible income), tax incentives, intercompany research and development cost-sharing arrangements, transfer pricing, tax credits and the realizability of deferred tax assets. While we believe we have appropriate support for the positions we have taken or that we plan to take on our tax returns, we regularly assess the potential outcomes of examinations by taxing authorities in determining the adequacy of our provision for income taxes. Therefore, the actual liability for U.S. or foreign taxes may be materially different from our estimates, which could result in the need to record additional tax liabilities or potentially reverse previously recorded tax liabilities. We are participating in the Internal Revenue Service (IRS) Compliance Assurance Process program whereby we endeavor to agree with the IRS on the treatment of all issues prior to filing our federal return. A benefit of participation in this program is that post-filing adjustments by the IRS are less likely to occur.

Recent Accounting Pronouncements

Information regarding recent accounting pronouncements and the impact of those pronouncements, if any, on our consolidated financial statements is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies."

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Marketable Securities

We have made investments in marketable equity securities of companies of varying size, style, industry and geography and changes in investment allocations may affect the price volatility of our investments. On July 26, 2018, we announced that we had been authorized to repurchase up to $30 billion of our common stock. The actions taken pursuant to our stock repurchase program have significantly reduced the amount of cash available to fund our investments in marketable securities.

Equity Price Risk. At September 29, 2019, the recorded value of our marketable equity securities was $418 million. A 10% decrease in the market price of our marketable equity securities at September 29, 2019 would have caused a decrease in the carrying amounts of these securities of $42 million. A 10% decrease in the market price of our marketable equity securities at September 30, 2018 would have caused a decrease in the carrying amounts of these securities of $17 million.

Interest Rate Risk. We invest a portion of our cash in a number of diversified fixed- and floating-rate securities consisting of cash equivalents, marketable debt securities and demand deposits that are subject to interest rate risk. Changes in the general level of interest rates can affect the fair value of our investment portfolio. If interest rates in the general economy were to rise, our holdings could lose value. As a result of divesting a substantial portion of our marketable securities portfolio and changes in portfolio allocation, the fair value of our investment portfolio is subject to lower interest rate risk. At September 29, 2019 and September 30, 2018, a hypothetical increase in interest rates of 100 basis points across the entire yield curve on our holdings would have resulted in a negligible decrease in the fair value of our holdings.

Other Investments

Equity Price Risk. We hold investments in non-marketable equity instruments in privately held companies that may be impacted by equity price risks. Volatility in the equity markets could negatively affect our investees' ability to raise additional capital as well as our ability to realize value from our investments through initial public offerings, mergers and private sales. Consequently, we could incur impairment losses or realized losses on all or a part of the values of our non-marketable equity investments. At September 29, 2019, the aggregate carrying value of our non-marketable equity investments was included in other noncurrent assets and was $1.1 billion.

Debt and Interest Rate Swap Agreements

Interest Rate Risk. At September 29, 2019, we have an aggregate principal amount of $15.5 billion of unsecured floating- and fixed-rate notes with varying maturity dates. We have also entered into interest rate swaps with an aggregate notional amount of $1.8 billion to effectively convert certain fixed-rate interest payments into floating-rate payments. The interest rates on our floating-rate notes and interest rate swaps are based on LIBOR. At September 29, 2019, a hypothetical increase in LIBOR-based interest rates of 100 basis points would cause our interest expense to increase by $18 million on an annualized basis as it relates to our floating-rate notes and interest rate swap agreements. At September 30, 2018, a hypothetical increase in LIBOR-based interest rates of 100 basis points would have caused our interest expense to increase by $22 million on an annualized basis as it relates to our floating-rate notes and interest rate swap agreements.

Additionally, we have a commercial paper program that provides for the issuance of up to $5.0 billion of commercial paper. At September 29, 2019, we had $499 million of commercial paper outstanding, with original maturities of less than three months. Changes in interest rates could affect the amounts of interest that we pay if we refinance the current outstanding commercial paper with new debt.

Additional information regarding our notes and related interest rate swap agreements and commercial paper program is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies" and "Notes to Consolidated Financial Statements, Note 6. Debt."

Foreign Exchange Risk

We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative financial instruments, including foreign currency forward and option contracts with financial counterparties. We utilize such derivative financial instruments for hedging or risk management purposes rather than for speculative purposes. Counterparties to our derivative contracts are all major banking institutions. In the event of the financial insolvency or distress of a counterparty to our derivative financial instruments, we may be unable to settle transactions if the counterparty does not provide us with sufficient collateral to secure its net settlement obligations to us, which could have a negative impact on our results. A description of our foreign currency accounting policies is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies.”

Foreign Currency Options. At September 29, 2019, our net asset related to foreign currency options designated as hedges of foreign currency risk on royalties earned from certain licensees was negligible. If our forecasted royalty revenues for currencies in which we hedge were to decline by 20% and foreign exchange rates were to change unfavorably by 20% in our hedged foreign currency, we would not incur a loss as our hedge positions would continue to be fully effective. Based on forecasts at September 30, 2018, assuming the same hypothetical market conditions, we would also not have incurred a loss.

Foreign Currency Forwards. At September 29, 2019, our net asset related to foreign currency forward contracts designated as hedges of foreign currency risk on certain operating expenditure transactions was negligible. If our forecasted operating expenditures for currencies in which we hedge were to decline by 20% and foreign exchange rates were to change unfavorably by 20% in our hedged foreign currency, we would incur a negligible loss. Based on forecasts at September 30, 2018, assuming the same hypothetical market conditions, a negligible loss would also have been incurred.

At September 29, 2019, our net asset related to foreign currency forward contracts not designated as hedging instruments used to manage foreign currency risk on certain receivables and payables was negligible. If the foreign exchange rates were to change unfavorably by 20% in our hedged foreign currency, we would not incur a loss as the change in the fair value of the foreign currency option and forward contracts would be offset by the change in fair value of the related receivables and/or payables being economically hedged. Based on forecasts at September 30, 2018, assuming the same hypothetical market conditions, we would also not have incurred a loss.

Net Investment Hedges. At September 29, 2019, we have designated $1.4 billion of foreign currency-denominated liabilities as hedges of our net investment in certain foreign subsidiaries. If foreign exchange rates were to change unfavorably by 10% in our hedged foreign currency, there would be an increase of $136 million in the accumulated other comprehensive loss attributable to the cumulative translation adjustment at September 29, 2019 related to our net investment hedges. The change in value recorded in cumulative translation adjustment would be expected to offset a corresponding foreign currency translation gain or loss from our investment in foreign subsidiaries.

Functional Currency. Financial assets and liabilities held by consolidated subsidiaries that are not denominated in the functional currency of those entities are subject to the effects of currency fluctuations and may affect reported earnings. As a global company, we face exposure to adverse movements in foreign currency exchange rates. We may hedge currency exposures associated with certain assets and liabilities denominated in nonfunctional currencies and certain anticipated nonfunctional currency transactions. As a result, we could experience unanticipated gains or losses on anticipated foreign currency cash flows, as well as economic loss with respect to the recoverability of investments. While we may hedge certain transactions with non-U.S. customers, declines in currency values in certain regions may, if not reversed, adversely affect future product sales because our products may become more expensive to purchase in the countries of the affected currencies.

Our analysis methods used to assess and mitigate the risks discussed above should not be considered projections of future risks.

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements at September 29, 2019 and September 30, 2018 and for each of the three years in the period ended September 29, 2019 and the Report of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm, are included in this Annual Report on pages F-1 through F-44.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such terms are defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the

Exchange Act). Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Annual Report.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under this framework, our management concluded that our internal control over financial reporting was effective as of September 29, 2019.

PricewaterhouseCoopers LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this Annual Report, has also audited the effectiveness of our internal control over financial reporting as of September 29, 2019, as stated in its report which appears on pages F-1 through F-4 in this Annual Report.

Inherent Limitations over Internal Controls

Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that:

i. pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;

ii. provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

iii. provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the consolidated financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations, including the possibility of human error and circumvention by collusion or overriding of controls. Accordingly, even an effective internal control system may not prevent or detect material misstatements on a timely basis. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the fourth quarter of fiscal 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item regarding directors is incorporated by reference to our 2020 Proxy Statement to be filed with the SEC in connection with our 2020 Annual Meeting of Stockholders (2020 Proxy Statement) in "Proposal 1: Election of Directors" under the heading "Nominees for Election." Certain information required by this item regarding executive officers is set forth in Item 1 of Part I of this Report under the heading "Executive Officers." The information required by this item regarding corporate governance is incorporated by reference to our 2020 Proxy Statement in the section titled "Corporate Governance" under the headings "Code of Ethics and Corporate Governance Principles and Practices," "Board Meetings, Committees and Attendance" and "Director Nominations."

Item 11. Executive Compensation

The information required by this item is incorporated by reference to our 2020 Proxy Statement in the sections titled "HR and Compensation Committee Report," "Executive Compensation and Related Information" and "Director Compensation," and in the section titled "Stock Ownership of Certain Beneficial Owners and Management" under the heading "Compensation Committee Interlocks and Insider Participation."

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference to our 2020 Proxy Statement in the section titled "Stock Ownership of Certain Beneficial Owners and Management," and in "Proposal 3" under the heading "Equity Compensation Plan Information."

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to our 2020 Proxy Statement in the section titled "Certain Relationships and Related-Person Transactions," and in the section titled "Corporate Governance" under the heading "Director Independence."

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to our 2020 Proxy Statement in "Proposal 2: Ratification of Selection of Independent Public Accountants."

PART IV

Item 15. Exhibits and Financial Statement Schedules

The following documents are filed as part of this report:

(a) Financial Statements:

Financial statement schedules other than those listed above have been omitted because they are either not required, not applicable or the information is otherwise included in the notes to the consolidated financial statements.

(b) Exhibits

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
2.1	Master Transaction Agreement, dated January 13, 2016, by and among Qualcomm Global Trading Pte. Ltd., each other Purchaser Group member, TDK Japan, each other Seller Group member, and, solely for purposes of Section 10.9 thereof, QUALCOMM Incorporated. (1)	8-K	1/13/2016	2.1	
2.2	Amendment #1, dated December 20, 2016, to Master Transaction Agreement, dated January 13, 2016, by and among Qualcomm Global Trading Pte. Ltd., each other Purchaser Group member, TDK Japan, each other Seller Group member, and, solely for purposes of Section 10.9 thereof, QUALCOMM Incorporated. (1)	10-Q	1/25/2017	2.3	
2.3	Amendment #2, dated January 19, 2017, to Master Transaction Agreement, dated January 13, 2016, by and among Qualcomm Global Trading Pte. Ltd., each other Purchaser Group member, TDK Japan, each other Seller Group member, and, solely for purposes of Section 10.9 thereof, QUALCOMM Incorporated. (1)	10-Q	1/25/2017	2.4	
2.4	Amendment #3, dated February 3, 2017, to Master Transaction Agreement, dated January 13, 2016, by and among Qualcomm Global Trading Pte. Ltd., each other Purchaser Group member, TDK Japan, each other Seller Group member, and, solely for purposes of Section 10.9 thereof, QUALCOMM Incorporated. (1)	10-Q	4/19/2017	2.6	
3.1	Amended and Restated Certificate of Incorporation.	8-K	4/20/2018	3.1	
3.2	Amended and Restated Bylaws.	8-K	7/17/2018	3.1	
4.1	Indenture, dated May 20, 2015, between the Company and U.S. Bank National Association, as trustee.	8-K	5/21/2015	4.1	
4.2	Officers' Certificate, dated May 20, 2015, for the Floating Rate Notes due 2018, the Floating Rate Notes due 2020, the 1.400% Notes due 2018, the 2.250% Notes due 2020, the 3.000% Notes due 2022, the 3.450% Notes due 2025, the 4.650% Notes due 2035 and the 4.800% Notes due 2045.	8-K	5/21/2015	4.2	
4.3	Form of Floating Rate Notes due 2020.	8-K	5/21/2015	4.4	
4.4	Form of 2.250% Notes due 2020.	8-K	5/21/2015	4.6	
4.5	Form of 3.000% Notes due 2022.	8-K	5/21/2015	4.7	
4.6	Form of 3.450% Notes due 2025.	8-K	5/21/2015	4.8	
4.7	Form of 4.650% Notes due 2035.	8-K	5/21/2015	4.9	
4.8	Form of 4.800% Notes due 2045.	8-K	5/21/2015	4.10	
4.9	Officers' Certificate, dated May 26, 2017, for the Floating Rate Notes due 2019, the Floating Rate Notes due 2020, the Floating Rate Notes due 2023, the 1.850% Notes due 2019, the 2.100% Notes due 2020, the 2.600% Notes due 2023, the 2.900% Notes due 2024, the 3.250% Notes due 2027 and the 4.300% Notes due 2047.	8-K	5/31/2017	4.2	
4.10	Form of Floating Rate Notes due 2023.	8-K	5/31/2017	4.5	
4.11	Form of 2.600% Notes due 2023.	8-K	5/31/2017	4.8	
4.12	Form of 2.900% Notes due 2024.	8-K	5/31/2017	4.9	
4.13	Form of 3.250% Notes due 2027.	8-K	5/31/2017	4.10	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
4.14	Form of 4.300% Notes due 2047.	8-K	5/31/2017	4.11	
4.15	Description of the Company's securities.				X
10.1	Form of Indemnity Agreement between the Company and its directors and officers. (2)	10-K	11/4/2015	10.1	
10.2	Form of Grant Notice and Stock Option Agreement under the 2006 Long-Term Incentive Plan. (2)	10-K	11/5/2009	10.84	
10.3	Form of Grant Notices and Global Employee Restricted Stock Unit Agreement under the 2006 Long-Term Incentive Plan. (2)	10-K	11/7/2012	10.105	
10.4	2006 Long-Term Incentive Plan, as amended and restated. (2)	10-Q	4/24/2013	10.112	
10.5	Form of Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2006 Long-Term Incentive Plan for non-employee directors residing in the United States and Spain. (2)	10-K	11/6/2013	10.119	
10.6	Amendment to 2006 Long-Term Incentive Plan, as amended and restated. (2)	10-Q	1/28/2015	10.126	
10.7	2016 Long-Term Incentive Plan. (2)	DEF 14A	1/21/2016	Appendix 5	
10.8	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in the United States. (2)	10-Q	4/20/2016	10.32	
10.9	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in Spain. (2)	10-Q	4/20/2016	10.33	
10.10	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in Singapore. (2)	10-Q	4/20/2016	10.34	
10.11	Form of Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement under the 2016 Long-Term Incentive Plan. (2)	10-K	11/2/2016	10.36	
10.12	Form of Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement under the 2016 Long-Term Incentive Plan. (2)	10-K	11/2/2016	10.37	
10.13	Amended and Restated Credit Agreement among QUALCOMM Incorporated, the lenders party thereto and Bank of America, N.A., as Administrative Agent, dated as of November 8, 2016.	8-K	11/9/2016	10.2	
10.14	Form of Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement under the 2016 Long-Term Incentive Plan, which includes a September 25, 2017 to September 27, 2020 performance period. (2)	10-K	11/1/2017	10.40	
10.15	Amendment to the Qualcomm Incorporated 2006 and 2016 Long-Term Incentive Plans, as amended and restated. (2)	8-K	12/22/2017	10.2	
10.16	Qualcomm Incorporated Non-Executive Officer Change in Control Severance Plan.	10-Q	1/31/2018	10.42	

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
10.17	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement for Non-Employee Directors in Singapore. (2)	10-Q	4/25/2018	10.58	
10.18	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement for Non-Employee Directors in Spain. (2)	10-Q	4/25/2018	10.59	
10.19	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement. (2)	10-Q	4/25/2018	10.60	
10.20	Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan, as amended. (2)	10-Q	4/25/2018	10.62	
10.21	Qualcomm Incorporated Executive Officer Change in Control Severance Plan. (2)	8-K	5/25/2018	10.1	
10.22	Qualcomm Incorporated Executive Officer Severance Plan. (2)	8-K	9/21/2018	10.1	
10.23	Qualcomm Incorporated 2019 Director Compensation Plan. (2)	10-K	11/7/2018	10.58	
10.24	Qualcomm Incorporated 2016 Long-Term Incentive Plan CEO Performance Stock Option Grant Notice and CEO Performance Stock Option Agreement. (2)	10-K	11/7/2018	10.59	
10.25	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement. (2)	10-K	11/7/2018	10.60	
10.26	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement. (2)	10-K	11/7/2018	10.61	
10.27	Form of 2019 Annual Cash Incentive Plan Performance Unit Agreement. (2)	10-Q	1/30/2019	10.62	
10.28	QUALCOMM Incorporated Non-Qualified Deferred Compensation Plan, as amended and restated effective February 13, 2019. (2)	10-Q	5/1/2019	10.7	
10.29	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award RTSR Shares Grant Notice and ROIC Shares Grant Notice, and Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Agreement (September 30, 2019 - September 25, 2022 Performance Period). (2)				X
10.30	Qualcomm Incorporated 2020 Director Compensation Plan. (2)				X
21	Subsidiaries of the Company.				X
23.1	Consent of Independent Registered Public Accounting Firm.				X
31.1	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Steve Mollenkopf.				X
31.2	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Akash Palkhiwala.				X
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Steve Mollenkopf.				X

Exhibit Number	Exhibit Description	Form	Date of First Filing	Exhibit Number	Filed Herewith
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Akash Palkhiwala.				X
101.INS	Inline XBRL Instance Document.				X
101.SCH	Inline XBRL Taxonomy Extension Schema.				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase.				X
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase.				X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase.				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase.				X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).				

(1) We shall furnish supplementally a copy of any omitted schedule to the Commission upon request.

(2) Indicates management contract or compensatory plan or arrangement required to be identified pursuant to Item 15(a).

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

November 6, 2019

QUALCOMM Incorporated

By /s/ Steve Mollenkopf

Steve Mollenkopf
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Steve Mollenkopf Steve Mollenkopf	Chief Executive Officer and Director (Principal Executive Officer)	November 6, 2019
/s/ Akash Palkhiwala Akash Palkhiwala	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	November 6, 2019
/s/ Erin Polek Erin Polek	Senior Vice President and Chief Accounting Officer (Principal Accounting Officer)	November 6, 2019
/s/ Barbara T. Alexander Barbara T. Alexander	Director	November 6, 2019
/s/ Mark Fields Mark Fields	Director	November 6, 2019
/s/ Jeffrey W. Henderson Jeffrey W. Henderson	Director	November 6, 2019
/s/ Ann M. Livermore Ann M. Livermore	Director	November 6, 2019
/s/ Harish Manwani Harish Manwani	Director	November 6, 2019
/s/ Mark D. McLaughlin Mark D. McLaughlin	Chairman	November 6, 2019
/s/ Clark T. Randt, Jr. Clark T. Randt, Jr.	Director	November 6, 2019
/s/ Francisco Ros Francisco Ros	Director	November 6, 2019
/s/ Irene B. Rosenfeld Irene B. Rosenfeld	Director	November 6, 2019
/s/ Neil Smit Neil Smit	Director	November 6, 2019
/s/ Anthony J. Vinciquerra Anthony J. Vinciquerra	Director	November 6, 2019

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of QUALCOMM Incorporated:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of QUALCOMM Incorporated and its subsidiaries as of September 29, 2019 and September 30, 2018, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended September 29, 2019, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of September 29, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 29, 2019 and September 30, 2018 and the results of their operations and their cash flows for each of the three years in the period ended September 29, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 29, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for revenues from contracts with customers in fiscal 2019.

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for income tax effects of intra-entity transfers of assets other than inventory in fiscal 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Income Taxes

As described in Notes 1 and 3 to the consolidated financial statements, the Company is subject to income taxes in the United States and numerous foreign jurisdictions, and the assessment of tax positions involves dealing with uncertainties in the application of complex tax laws and regulations which are subject to legal and factual interpretation, judgment and uncertainty. The Company recorded a provision for income taxes of $3.1 billion for the year ended September 29, 2019 and net deferred tax assets of $1.1 billion, including a valuation allowance of $1.7 billion, a noncurrent income taxes receivable of $1.4 billion, and unrecognized tax benefits of $1.7 billion as of September 29, 2019. Significant judgments and estimates are required when determining the provision for income taxes and other tax positions, which includes the application of complex tax laws and regulations (including new temporary regulations and evolution of court rulings), special deductions such as FDII (foreign-derived intangible income), tax incentives, intercompany research and development cost-sharing arrangements, transfer pricing, tax credits and the realizability of deferred tax assets.

The principal considerations for our determination that performing procedures relating to income taxes is a critical audit matter are the matter involved significant judgment by management when assessing complex tax laws and regulations (including new temporary regulations and recent court rulings) and special deductions such as FDII, transfer pricing and tax credits as it relates to determining the provision for income taxes and other tax positions. This led to a high degree of auditor judgment and significant audit effort in performing our procedures over income taxes, including the use of professionals with specialized skill and knowledge to assist in evaluating the audit evidence obtained from these procedures.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. The procedures included testing the effectiveness of controls relating to the provision of income taxes and other tax positions. The procedures also included, among others, testing the provision for income taxes, including the effective tax rate reconciliation, permanent and temporary differences, inspecting correspondence with tax regulators and external tax advisors, and testing the underlying data and evaluating the significant assumptions used in establishing and measuring tax-related assets and liabilities, including the application of new temporary regulations and recent court rulings. Professionals with specialized skill and knowledge were used to assist in evaluating the application of relevant tax laws, the provision for income taxes and the reasonableness of management's assessments of whether certain tax positions are more-likely-than-not of being sustained.

Legal and Regulatory Proceedings

As described in Notes 1 and 7 to the consolidated financial statements, the Company is currently involved in certain legal and regulatory proceedings. If there is at least a reasonable possibility that a material loss may have been incurred associated with a pending legal and regulatory proceeding, management discloses such fact, and if reasonably estimable, management provides an estimate of the possible loss or range of possible loss. Management records the best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of a loss can be reasonably estimated with no best estimate in the range, management records the minimum estimated liability. As additional information becomes available, management assesses the potential liability related to pending legal or regulatory proceedings, and revises the estimates and updates the disclosures accordingly. Significant judgment is required by management in both the determination of probability of loss and the determination as to whether a loss is reasonably estimable.

The principal considerations for our determination that performing procedures relating to legal and regulatory proceedings is a critical audit matter are the matter involved significant judgment by management when assessing the likelihood of a loss being incurred and when determining whether a reasonable estimate of the loss or range of loss can be made. This led to a high degree of auditor judgment, subjectivity and significant audit effort in evaluating management's assessment of the loss contingencies associated with the legal and regulatory proceedings.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's evaluation of legal and regulatory proceedings, including controls over determining whether a loss is probable and whether the amount of loss can be reasonably estimated, including related financial statement disclosures. These procedures also included, among others: obtaining and evaluating the letters of audit inquiry with external and internal legal counsel, reading certain correspondence the Company received from regulators, reading certain documents the Company has filed with the courts and related counterparty filings, evaluating the reasonableness of management's process for identifying and assessing loss contingencies regarding whether an unfavorable outcome is probable and reasonably estimable, and evaluating the sufficiency of the Company's legal and regulatory proceedings disclosures in the consolidated financial statements.

Revenue Recognition - Estimation of Sales-based Royalty Revenues

As described in Note 1 to the consolidated financial statements, a vast majority of the $4.6 billion of the Qualcomm Technology Licensing (QTL) segment's revenues for the year ended September 29, 2019 related to sales-based royalty arrangements and is recognized as revenues when a contract exists and to the extent it is probable that a significant reversal of cumulative revenues will not occur. As disclosed in the financial statements, the Company grants licenses or otherwise provides rights to use portions of its intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Licensees pay royalties based on their sales of products incorporating or using the licensed intellectual property, which are generally based upon a percentage of the licensee's selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). If a contract is determined to exist, management estimates and recognizes sales-based royalties on such licensed products in the period in which the associated sales by the licensee occur, subject to certain constraints on management's ability to estimate such royalties. As certain licensees have disputed, underreported, underpaid, not reported and/or not paid royalties owed to the Company under their license agreements, management applied significant judgment to determine whether a contract exists and, if so, the extent to which those revenues are constrained. Management analyzes the risk of a significant revenue reversal considering both the likelihood and magnitude of the reversal and, if necessary, constrains the amount of estimated revenues recognized, which may result in recognizing revenues less than amounts contractually owed to the Company.

The principal considerations for our determination that performing procedures relating to the estimation of sales-based royalty revenues for revenue recognition is a critical audit matter are there was significant judgment by management when determining whether a contract exists and in developing the estimate of sales-based royalties. This in turn led to significant auditor judgment, subjectivity and significant audit effort in performing procedures to evaluate the estimate of sales-based royalties, including management's assessment of the existence of a contract and significant assumptions related to the extent of any constraint.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. The procedures included testing the effectiveness of controls relating to the revenue recognition process, including the estimation of sales-based royalty revenues. The procedures also included, among others, testing management's process for determining the existence of a contract and management's estimate of sales-based royalties including evaluating the reasonableness of significant assumptions related to whether any further constraints are

required and testing the underlying data used in management's estimate for a sample of contracts. Evaluating management's assumptions related to the constraints involved evaluating whether the constraints assumptions used by management were reasonable considering disputes with certain licensees and the impact of any existing litigation on the estimate of sales-based royalties. Evaluating the reasonableness of the estimate of sales-based royalties also involved assessing management's ability to reasonably estimate those revenues by performing a comparison of the estimate for the prior reporting period to the actual royalties reported by licensees in the subsequent period for a sample of contracts.

/s/ PricewaterhouseCoopers LLP

San Diego, California
November 6, 2019

We have served as the Company's auditor since 1985.

QUALCOMM Incorporated
CONSOLIDATED BALANCE SHEETS
(In millions, except per share data)

	September 29, 2019	September 30, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 11,839	$ 11,777
Marketable securities	421	311
Accounts receivable, net	2,471	2,904
Inventories	1,400	1,693
Other current assets	634	699
Total current assets	16,765	17,384
Deferred tax assets	1,196	936
Property, plant and equipment, net	3,081	2,975
Goodwill	6,282	6,498
Other intangible assets, net	2,172	2,955
Other assets	3,461	1,970
Total assets	$ 32,957	$ 32,718
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Trade accounts payable	$ 1,368	$ 1,825
Payroll and other benefits related liabilities	1,048	1,081
Unearned revenues	565	500
Short-term debt	2,496	1,005
Other current liabilities	3,458	6,978
Total current liabilities	8,935	11,389
Unearned revenues	1,160	1,620
Income taxes payable	2,088	2,312
Long-term debt	13,437	15,365
Other liabilities	2,428	1,225
Total liabilities	28,048	31,911
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; 8 shares authorized; none outstanding	—	—
Common stock and paid-in capital, $0.0001 par value; 6,000 shares authorized; 1,145 and 1,219 shares issued and outstanding, respectively	343	—
Retained earnings	4,466	542
Accumulated other comprehensive income	100	265
Total stockholders' equity	4,909	807
Total liabilities and stockholders' equity	$ 32,957	$ 32,718

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF OPERATIONS
(In millions, except per share data)

	Year Ended		
	September 29, 2019	September 30, 2018	September 24, 2017
Revenues:			
Equipment and services	$ 14,611	$ 17,400	$ 16,647
Licensing	9,662	5,211	5,611
Total revenues	24,273	22,611	22,258
Costs and expenses:			
Cost of revenues	8,599	10,244	9,792
Research and development	5,398	5,625	5,485
Selling, general and administrative	2,195	2,986	2,658
Other	414	3,135	1,742
Total costs and expenses	16,606	21,990	19,677
Operating income	7,667	621	2,581
Interest expense	(627)	(768)	(494)
Investment and other income, net	441	539	900
Income before income taxes	7,481	392	2,987
Income tax expense	(3,095)	(5,356)	(543)
Net income (loss)	4,386	(4,964)	2,444
Net loss attributable to noncontrolling interests	—	—	1
Net income (loss) attributable to Qualcomm	$ 4,386	$ (4,964)	$ 2,445
Basic earnings (loss) per share attributable to Qualcomm	$ 3.63	$ (3.39)	$ 1.66
Diluted earnings (loss) per share attributable to Qualcomm	$ 3.59	$ (3.39)	$ 1.64
Shares used in per share calculations:			
Basic	1,210	1,463	1,477
Diluted	1,220	1,463	1,490

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In millions)

	Year Ended		
	September 29, 2019	September 30, 2018	September 24, 2017
Net income (loss)	$ 4,386	$ (4,964)	$ 2,444
Other comprehensive loss, net of income taxes:			
Foreign currency translation (losses) gains	(110)	(136)	309
Net unrealized (losses) gains on certain available-for-sale securities, net of tax benefit (expense) of $0, ($8) and $59, respectively	(6)	29	(102)
Reclassification of net realized gains on available-for-sale securities included in net income (loss), net of tax expense of $0, $3 and $156, respectively	(1)	(9)	(286)
Net unrealized gains (losses) on derivative instruments, net of tax (expense) benefit of ($7), $6 and $0, respectively	26	(17)	(49)
Other (losses) gains, net of tax expense of $0, $0 and $3, respectively	(19)	(3)	10
Other reclassifications included in net income (loss), net of tax expense (benefit) of $1, ($6) and ($42), respectively	(4)	17	74
Total other comprehensive loss	(114)	(119)	(44)
Total comprehensive income (loss)	4,272	(5,083)	2,400
Comprehensive loss attributable to noncontrolling interests	—	—	1
Comprehensive income (loss) attributable to Qualcomm	$ 4,272	$ (5,083)	$ 2,401

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	Year Ended		
	September 29, 2019	**September 30, 2018**	**September 24, 2017**
Operating Activities:			
Net income (loss)	$ 4,386	$ (4,964)	$ 2,444
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization expense	1,401	1,561	1,461
Income tax provision in excess of (less than) income tax payments	1,976	4,481	(412)
Non-cash portion of share-based compensation expense	1,037	883	914
Net gains on marketable securities and other investments	(356)	(124)	(530)
Indefinite and long-lived asset impairment charges	203	273	76
Impairment losses on marketable securities and other investments	135	75	177
Other items, net	(272)	(49)	(26)
Changes in assets and liabilities:			
Accounts receivable, net	1,373	734	(1,104)
Inventories	273	337	(200)
Other assets	78	24	136
Trade accounts payable	(443)	(94)	(45)
Payroll, benefits and other liabilities	(2,376)	1,005	2,341
Unearned revenues	(129)	(234)	(231)
Net cash provided by operating activities	7,286	3,908	5,001
Investing Activities:			
Capital expenditures	(887)	(784)	(690)
Purchases of debt and equity marketable securities	—	(5,936)	(19,062)
Proceeds from sales and maturities of debt and equity marketable securities	139	9,188	41,715
Purchases of other marketable securities	—	(49)	(2,010)
Proceeds from sales and maturities of other marketable securities	—	50	2,006
Acquisitions and other investments, net of cash acquired	(252)	(326)	(1,544)
Proceeds from other investments	68	222	23
Other items, net	126	16	25
Net cash (used) provided by investing activities	(806)	2,381	20,463
Financing Activities:			
Proceeds from short-term debt	5,989	11,131	8,558
Repayment of short-term debt	(6,492)	(11,127)	(9,309)
Proceeds from long-term debt	—	—	10,953
Repayment of long-term debt	—	(5,513)	—
Proceeds from issuance of common stock	414	603	497
Repurchases and retirements of common stock	(1,793)	(22,580)	(1,342)
Dividends paid	(2,968)	(3,466)	(3,252)
Payments of tax withholdings related to vesting of share-based awards	(266)	(280)	(268)
Payment of purchase consideration related to RF360 Holdings	(1,163)	(157)	(115)
Other items, net	(107)	(111)	(151)
Net cash (used) provided by financing activities	(6,386)	(31,500)	5,571
Effect of exchange rate changes on cash and cash equivalents	(32)	(41)	48
Net increase (decrease) in total cash and cash equivalents	62	(25,252)	31,083
Total cash and cash equivalents at beginning of period	11,777	37,029	5,946
Total cash and cash equivalents at end of period	$ 11,839	$ 11,777	$ 37,029

Reconciliation to the consolidated balance sheets			
Cash and cash equivalents	$ 11,839	$ 11,777	$ 35,029
Restricted cash and restricted cash equivalents included in other assets	—	—	2,000
Total cash and cash equivalents at end of period	$ 11,839	$ 11,777	$ 37,029

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions)

	Year Ended		
	September 29, 2019	**September 30, 2018**	**September 24, 2017**
Total stockholders' equity, beginning balance	$ 807	$ 30,725	$ 31,768
Common stock and paid-in capital:			
Balance at beginning of period	—	274	414
Common stock issued under employee benefit plans and the related tax benefits	415	612	499
Repurchases and retirements of common stock	(910)	(1,536)	(1,342)
Share-based compensation	1,104	930	975
Tax withholdings related to vesting of share-based payments	(266)	(280)	(268)
Other	—	—	(4)
Balance at end of period	343	—	274
Retained earnings:			
Balance at beginning of period	542	30,067	30,936
Cumulative effect of accounting changes (Note 1)	3,455	—	—
Net income (loss) attributable to Qualcomm	4,386	(4,964)	2,445
Repurchases and retirements of common stock	(883)	(21,044)	—
Dividends	(3,034)	(3,517)	(3,314)
Balance at end of period	4,466	542	30,067
Accumulated other comprehensive income:			
Balance at beginning of period	265	384	428
Cumulative effect of accounting changes (Note 1)	(51)	—	—
Other comprehensive loss	(114)	(119)	(44)
Balance at end of period	100	265	384
Total Qualcomm stockholders' equity	4,909	807	30,725
Noncontrolling Interests			
Balance at beginning of period	—	—	(10)
Other comprehensive loss	—	—	(1)
Other	—	—	11
Balance at end of period	—	—	—
Total stockholders' equity, ending balance	$ 4,909	$ 807	$ 30,725
Dividends per share announced	$ 2.48	$ 2.38	$ 2.20

See accompanying notes.

QUALCOMM Incorporated
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Significant Accounting Policies

We develop, design, manufacture, have manufactured on our behalf and market digital communications products, which principally consist of integrated circuits and system software based on CDMA (Code Division Multiple Access), OFDMA (Orthogonal Frequency Division Multiple Access) and other technologies for use in mobile devices, wireless networks, broadband gateway equipment, consumer electronic devices, devices used in IoT and automotive telematics and infotainment systems. We also grant licenses to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products, and receive ongoing royalties based on sales by licensees of wireless products incorporating our patented technologies and may also receive fixed license fees (payable in one or more installments).

Principles of Consolidation. The consolidated financial statements include the assets, liabilities and operating results of Qualcomm and its subsidiaries, including our subsidiary RF360 Holdings Singapore Pte. Ltd (RF360 Holdings) since its formation in fiscal 2017 (Note 9). During the third quarter of fiscal 2018, we eliminated the one-month reporting lag previously used to consolidate RF360 Holdings to provide contemporaneous reporting within our consolidated financial statements. The effect of this change was not material to the consolidated financial statements, and therefore, the impact of eliminating the one-month reporting lag was included in our results of operations for fiscal 2018. Intercompany transactions and balances have been eliminated.

Financial Statement Preparation. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts and the disclosure of contingent amounts in our consolidated financial statements and the accompanying notes. Examples of our significant accounting estimates that may involve a higher degree of judgment and complexity than others include: the estimation of sales-based royalty revenues; the impairment of other investments; the valuation of inventories; the valuation of the recoverability of goodwill and other indefinite-lived and long-lived assets; the recognition, measurement and disclosure of loss contingencies related to legal and regulatory proceedings; and the calculation of our income tax provision, including the recognition and measurement of uncertain tax positions. Actual results could differ from those estimates. Certain prior year amounts have been reclassified to conform to the current year presentation.

Revision of Prior Period Financial Statements. In connection with the preparation of our consolidated financial statements, we identified an immaterial error related to the recognition of certain royalty revenues of our QTL (Qualcomm Technology Licensing) segment in the quarterly and annual periods in fiscal 2018 and third and fourth quarters and annual period in fiscal 2017. In accordance with SAB No. 99, "Materiality," and SAB No. 108, "Considering the Effects of Prior Year Misstatements when Quantifying Misstatements in Current Year Financial Statements," we evaluated the error and determined that the related impact was not material to our financial statements for any prior annual or interim period, but that correcting the cumulative impact of the error would be significant to our results of operations for the three months ended December 30, 2018. Accordingly, we have revised previously reported financial information for such immaterial error, as previously disclosed in our Quarterly Report on Form 10-Q for the first, second and third quarters of fiscal 2019. A summary of revisions to certain previously reported financial information presented herein for comparative purposes is included in Note 12.

Fiscal Year. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. The fiscal year ended September 29, 2019 and September 24, 2017 each included 52 weeks. The fiscal years ended September 30, 2018 included 53 weeks.

Recently Adopted Accounting Pronouncements.

Revenue Recognition: In May 2014, the Financial Accounting Standards Board (FASB) issued new accounting guidance related to revenue recognition (ASC 606), which outlines a comprehensive revenue recognition model and supersedes most current revenue recognition accounting guidance and requires increased disclosures. The new accounting guidance defines a five-step approach that requires a company to recognize revenue as control of goods or services transfers to a customer at an amount that reflects the expected consideration to be received in exchange for those goods or services. We adopted ASC 606 in the first quarter of fiscal 2019 using the modified retrospective transition method only to those contracts that were not completed as of October 1, 2018. We recognized the cumulative effect of initially applying the new revenue accounting guidance as an adjustment to opening retained earnings. Prior period results have not been restated and continue to be reported in accordance with the accounting guidance in effect for those periods (ASC 605). We have implemented new accounting policies, systems, processes and internal controls necessary to support the requirements of ASC 606.

Adoption of this new accounting guidance most significantly impacts the timing of sales-based royalty revenues, which are the vast majority of our QTL segment's revenues. Prior to adoption, we recognized sales-based royalties as revenues in the period in which such royalties were reported by licensees, which was after the conclusion of the quarter in which the licensees' sales occurred and when all other revenue recognition criteria had been met. Under the new accounting guidance, we estimate and recognize sales-based royalties in the period in which the associated sales occur, subject to certain constraints on our ability to estimate such amounts, resulting in an acceleration of revenue recognition compared to the historical method under ASC 605. Since we do not invoice for sales-based royalties estimated and recognized in any given quarter until after the conclusion of that quarter (which is generally the following quarter when such royalties are reported by licensees), revenues recognized from sales-based royalties results in unbilled receivables (included in accounts receivable, net on the consolidated balance sheet). The adoption of ASC 606 did not otherwise have a material impact.

The new accounting guidance also impacts the timing of recognizing certain customer incentives, which are recorded as a reduction to revenues in the period that the related revenues are earned. Prior to adoption, we accounted for certain customer incentive arrangements, including volume-related and other pricing rebates or cost reimbursements for marketing and other activities involving certain of our products and technologies, in part based on the maximum potential liability. Under the new accounting guidance, we estimate the amount of all customer incentives.

The following table summarizes the cumulative effects of adopting the new revenue accounting guidance (substantially all of which related to the impact to QTL's sales-based royalties) on our consolidated balance sheet at October 1, 2018 (in millions):

	Balance at September 30, 2018	Adjustment	Opening Balance at October 1, 2018
Assets			
Accounts receivable, net	$ 2,904	$ 957	$ 3,861
Other current assets	699	1	700
Deferred tax assets	936	(98)	838
Other assets	1,970	1	1,971
Liabilities			
Unearned revenues, current	$ 500	$ 6	$ 506
Other current liabilities	6,978	125	7,103
Unearned revenues	1,620	(110)	1,510
Stockholders' equity			
Retained earnings	$ 542	$ 840	$ 1,382

The following tables summarize the impacts of adopting the new revenue accounting guidance on our consolidated balance sheet and statement of operations (in millions):

	Balance at September 29, 2019		
Balance Sheet	**As Reported ASC 606**	**Adjustment**	**ASC 605**
Assets			
Accounts receivable, net	$ 2,471	$ (1,171)	$ 1,300
Other current assets	634	(35)	599
Deferred tax assets	1,196	140	1,336
Other assets	3,461	(62)	3,399
Liabilities			
Unearned revenues, current	$ 565	$ 55	$ 620
Other current liabilities	3,458	(169)	3,289
Unearned revenues	1,160	182	1,342
Other liabilities	2,428	(58)	2,370
Stockholders' equity			
Retained earnings	$ 4,466	$ (1,138)	$ 3,328

	Year Ended September 29, 2019		
Statement of Operations	**As Reported ASC 606**	**Adjustment**	**ASC 605**
Revenues			
Equipment and services	$ 14,611	$ (106)	$ 14,505
Licensing	9,662	(270)	9,392
Income tax expense	(3,095)	78	(3,017)
Net income	4,386	(298)	4,088

Adoption of the new accounting guidance had no impact to net cash provided (used) by operating, financing or investing activities on our consolidated statement of cash flows for fiscal 2019.

Financial Assets: In January 2016, the FASB issued new accounting guidance on classifying and measuring financial instruments, which requires that all equity investments, other than equity-method investments, in unconsolidated entities generally be measured at fair value through earnings in the statement of operations. Additionally, it changes the disclosure requirements for financial instruments. We adopted the new accounting guidance in the first quarter of fiscal 2019 using the modified retrospective transition method for investments in marketable securities, which have readily determinable fair values, with the cumulative effect of applying the new accounting guidance recognized as an adjustment to opening retained earnings. Upon adoption, we reclassified $50 million of unrealized gains, net of the associated tax effects, related to our investments in marketable securities from accumulated other comprehensive income to opening retained earnings. We have applied the prospective transition method for investments in non-marketable securities, which are investments in privately held companies that do not have readily determinable fair values and will recognize, through earnings, any unrealized gains that have accumulated in the period in which there is an observable transaction, if any.

Prior to the adoption of the new accounting guidance in the first quarter of fiscal 2019, investments in marketable equity securities were generally classified as available-for-sale equity investments, with net unrealized gains or losses recorded as a component of accumulated other comprehensive income, net of income taxes. Beginning in fiscal 2019, all gains and losses on investments in marketable equity securities, realized and unrealized, are recognized in investment and other income, net.

Prior to the adoption of the new accounting guidance in the first quarter of fiscal 2019, investments in non-marketable equity securities were recorded at cost less impairment, if any, with any losses resulting from an impairment recognized in investment and other income, net. Beginning in fiscal 2019, investments in non-marketable equity securities are recorded at cost, less impairments, adjusted for observable price changes in orderly transactions for identical or similar securities. All gains and losses on investments in non-marketable equity securities, realized and unrealized, are recognized in investment and other income, net.

In addition, prior to adoption, we recorded impairment losses in earnings on investments in non-marketable equity securities when an impairment was considered other than temporary. Beginning in fiscal 2019, we record impairment losses in earnings when we believe an investment has experienced a decline in value.

Hedge Instruments: In August 2017, the FASB issued new accounting guidance that expands and refines hedge accounting for both financial and non-financial risks, aligns the recognition and presentation of the effects of hedging instruments and hedged items in the financial statements, and includes targeted improvements related to the assessment of hedge effectiveness. The new accounting guidance also modifies disclosure requirements for hedging activities. We adopted the new accounting guidance in the first quarter of 2019 using the modified retrospective transition method and recorded a negligible adjustment to opening retained earnings. The new accounting guidance did not have a material impact on our consolidated financial statements.

Statement of Cash Flows: In August 2016, the FASB issued new accounting guidance related to the classification of certain cash receipts and cash payments in the statement of cash flows. We adopted the new accounting guidance in the first quarter of fiscal 2019 using the retrospective transition method for each period presented, which did not have a material impact on our consolidated statements of cash flows.

In November 2016, the FASB issued new accounting guidance that requires companies to include restricted cash and cash equivalents as a component in total cash and cash equivalents on the statement of cash flows. As a result, the consolidated statement of cash flows no longer reflects transfers between cash and cash equivalents and restricted cash and cash equivalents. We adopted the new accounting guidance in the first quarter of fiscal 2019 using the retrospective transition method, which resulted in certain amounts in fiscal 2017 and 2018 being adjusted to conform to the new accounting guidance. In fiscal 2017, $2.0 billion was designated as collateral for outstanding letters of credit in connection with the then proposed acquisition of NXP Semiconductors N.V. (NXP). During fiscal 2017, $1.3 billion of the amount held as collateral was invested in time deposits that were not considered cash equivalents, which subsequently matured. This resulted in an adjustment to investing activities for fiscal 2017 to reflect the $1.3 billion purchase and subsequent maturity of time deposits and a $2.0 billion reduction in investing activities to reflect removal of the activity of restricted cash and cash equivalents. In fiscal 2018, such restricted cash and cash equivalents were released from restriction, which resulted in a decrease in investing activities by such amount.

Income Taxes: In October 2016, the FASB issued new accounting guidance that changes the accounting for the income tax effects of intra-entity transfers of assets other than inventory. Under the new accounting guidance, the selling (transferring) entity is required to recognize a current tax expense or benefit upon transfer of the asset. Similarly, the purchasing (receiving) entity is required to recognize a deferred tax asset or deferred tax liability, as well as the related deferred tax benefit or expense, upon receipt of the asset. We adopted the new accounting guidance in the first quarter of fiscal 2019 using the modified retrospective transition method, with the cumulative effect of applying the new accounting guidance recognized as an adjustment to opening retained earnings of $2.6 billion, primarily as the result of establishing a deferred tax asset on the basis difference of certain intellectual property distributed from one of our foreign subsidiaries to a subsidiary in the United States in fiscal 2018. During fiscal 2019, the United States Treasury Department issued new temporary regulations that resulted in a change to the deductibility of dividend income received by a U.S. stockholder from a foreign corporation. As a result of this change, pursuant to an agreement with the Internal Revenue Service, we relinquished the federal tax basis step-up in such distributed intellectual property. Therefore, the related deferred tax asset was derecognized, resulting in a $2.5 billion charge to income tax expense in fiscal 2019 (Note 3). The ongoing impact of this accounting guidance will be dependent on the facts and circumstances of any transactions within its scope.

Cash Equivalents. We consider all highly liquid investments with original maturities of 90 days or less to be cash equivalents. Cash equivalents are comprised of money market funds, certificates of deposit, commercial paper, corporate bonds and notes, certain bank time and demand deposits and government agencies' securities. The carrying amounts approximate fair value due to the short maturities of these instruments.

Marketable Securities. Marketable securities include marketable equity securities and available-for-sale debt securities for which classification is determined at the time of purchase and reevaluated at each balance sheet date. We classify marketable securities as current or noncurrent based on the nature of the securities and their availability for use in current operations. Marketable securities are stated at fair value with all realized and unrealized gains and losses on investments in marketable equity securities and realized gains and losses on available-for-sale debt securities recognized in investment and other income, net. Net unrealized gains or losses on available-for-sale debt securities are recorded as a component of accumulated other comprehensive income, net of income taxes. The realized gains and losses on marketable securities are determined using the specific identification method.

At each balance sheet date, we assess available-for-sale debt securities in an unrealized loss position to determine whether the unrealized loss is other than temporary. We consider factors including: the significance of the decline in value as compared to the cost basis; underlying factors contributing to a decline in the prices of securities in a single asset class; how long the market value of the security has been less than its cost basis; the security's relative performance versus its peers, sector or asset class; the market and economy in general; views of external investment managers; news or financial information that has been released specific to the investee; and the outlook for the overall industry in which the investee operates.

If a debt security's market value is below amortized cost and we either intend to sell the security or it is more likely than not that we will be required to sell the security before its anticipated recovery, we record an other-than-temporary impairment charge to investment and other income, net for the entire amount of the impairment. For the remaining debt securities, if an other-than-temporary impairment exists, we separate the other-than-temporary impairment into the portion of the loss related to credit factors, or the credit loss portion, which is recorded as a charge to investment and other income, net, and the portion of the loss that is not related to credit factors, or the noncredit loss portion, which is recorded as a component of other accumulated comprehensive income, net of income taxes.

Equity Method and Non-marketable Equity Investments. Equity investments for which we have significant influence, but not control over the investee and are not the primary beneficiary of the investee's activities, are accounted for under the equity method. Our share of gains and losses in equity method investments are recorded in investment and other income, net. Non-marketable equity investments (for which we do not have significant influence or control) are investments without readily determinable fair values that are recorded based on initial cost minus impairment, if any, plus or minus adjustments resulting from observable price changes in orderly transactions for identical or similar securities. All gains and losses on investments in non-marketable equity securities, realized and unrealized, are recognized in investment and other income, net. We monitor equity method investments and non-marketable equity securities for events or circumstances that could indicate the investments are impaired, such as a deterioration in the investee's financial condition and business forecasts and lower valuations in recently completed or anticipated financings, and recognize a charge to investment and other income, net for the difference between the estimated fair value and the carrying value. For equity method investments, we record impairment losses in earnings only when impairments are considered other-than-temporary.

Derivatives. Our primary objectives for holding derivative instruments are to manage interest rate risk on our long-term debt and to manage foreign exchange risk for certain foreign currency revenues, operating expenses, receivables and payables. Derivative instruments are recorded at fair value and included in other current or noncurrent assets or other current or noncurrent liabilities based on their maturity dates. Counterparties to our derivative instruments are all major banking institutions.

Interest Rate Swaps: We manage our exposure to certain interest rate risks related to our long-term debt through the use of interest rate swaps. Such swaps allow us to effectively convert fixed-rate payments into floating-rate payments based on LIBOR. These transactions are designated as fair value hedges, and the gains and losses related to changes in the fair value of the interest rate swaps substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to changes in the market interest rates. The net gains and losses on the interest rate swaps, as well as the offsetting gains or losses on the related fixed-rate debt attributable to the hedged risks, are recognized in earnings as interest expense in the current period. The interest settlement payments associated with the interest rate swap agreements are classified as cash flows from operating activities in the consolidated statements of cash flows.

At September 29, 2019 and September 30, 2018, the aggregate fair value of our interest rate swaps related to our long-term debt issued in May 2015 was negligible and $50 million, respectively. The fair values of the swaps were recorded in other current liabilities and other noncurrent assets at September 29, 2019 and in other noncurrent liabilities at September 30, 2018. At September 29, 2019 and September 30, 2018, the swaps had an aggregate notional amount of $1.8 billion, which effectively converted approximately 43% and 50% of the fixed-rate debt due in 2020 and 2022, respectively, into floating-rate debt, with maturities matching our fixed-rate debt due in 2020 and 2022.

Foreign Currency Hedges: We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative instruments, including foreign currency forward and option contracts with financial counterparties, that may or may not be designated as hedging instruments. These derivative instruments have maturity dates of less than twelve months. Gains and losses arising from such contracts that are designated as cash flow hedging instruments are recorded as a component of accumulated other comprehensive income as gains and losses on derivative instruments, net of income taxes. The hedging gains and losses in accumulated other comprehensive income are subsequently reclassified to revenues or costs and expenses, as applicable, in the consolidated statements of operations in the same period in which the underlying transactions affect our earnings. The cash flows associated with derivative instruments designated as cash flow hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction. The fair values of our foreign currency forward and option contracts used to hedge foreign currency risk designated as cash flow hedges recorded in total assets were negligible at September 29, 2019. The fair values of our foreign currency forward and option contracts used to hedge foreign currency risk designated as cash flow hedges recorded in total assets and in total liabilities were negligible and $19 million, respectively, at September 30, 2018.

For foreign currency forward and option contracts not designated as hedging instruments, the changes in fair value are recorded in investment and other income, net in the period of change. The cash flows associated with derivative instruments not designated as hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction. The fair values of our foreign currency forward and option contracts not designated as hedging instruments were negligible at September 29, 2019 and September 30, 2018.

Gross Notional Amounts: The gross notional amounts of our interest rate and foreign currency derivatives by instrument type were as follows (in millions):

	September 29, 2019	September 30, 2018
Forwards	$ 878	$ 682
Options	176	1,375
Swaps	1,750	1,750
	$ 2,804	$ 3,807

The gross notional amounts of our derivatives by currency were as follows (in millions):

	September 29, 2019	September 30, 2018
Chinese renminbi	$ 463	$ 650
Euro	—	938
Indian rupee	440	336
Japanese yen	12	17
United States dollar	1,889	1,866
	$ 2,804	$ 3,807

Other Hedging Activities. We have designated $1.4 billion of foreign currency-denominated liabilities related to the fines imposed by the European Commission (Note 7) as hedges of our net investment in certain foreign subsidiaries as of September 29, 2019. Gains and losses arising from the portion of these balances that are designated as net investment hedges are recorded in accumulated other comprehensive income as a component of the foreign currency translation adjustment.

Fair Value Measurements. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants as of the measurement date. Applicable accounting guidance provides an established hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs that market participants would use in valuing the asset or liability and are developed based on market data obtained from sources independent of us. Unobservable inputs are inputs that reflect our assumptions about the factors that market participants would use in valuing the asset or liability. There are three levels of inputs that may be used to measure fair value:

- Level 1 includes financial instruments for which quoted market prices for identical instruments are available in active markets.
- Level 2 includes financial instruments for which there are inputs other than quoted prices included within Level 1 that are observable for the instrument.

- Level 3 includes financial instruments for which fair value is derived from valuation techniques in which one or more significant inputs are unobservable, including our own assumptions.

Assets and liabilities measured at fair value are classified based on the lowest level of input that is significant to the fair value measurement. We review the fair value hierarchy classification on a quarterly basis. Changes in the observability of valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy. We recognize transfers into and out of levels within the fair value hierarchy at the end of the fiscal month in which the actual event or change in circumstances that caused the transfer to occur.

Cash Equivalents and Marketable Securities: With the exception of auction rate securities, we obtain pricing information from quoted market prices, pricing vendors or quotes from brokers/dealers. We conduct reviews of our primary pricing vendors to determine whether the inputs used in the vendor's pricing processes are deemed to be observable. The fair value for interest-bearing securities includes accrued interest.

The fair value of corporate bonds and notes and common and preferred stock is generally determined using standard observable inputs, including reported trades, quoted market prices, matrix pricing, benchmark yields, broker/dealer quotes, issuer spreads, two-sided markets and/or benchmark securities.

The fair value of auction rate securities is estimated using a discounted cash flow model that incorporates transaction details, such as contractual terms, maturity and timing and amount of future cash flows, as well as assumptions related to liquidity, default likelihood and recovery, the future state of the auction rate market and credit valuation adjustments of market participants. Though most of the securities we hold are pools of student loans guaranteed by the United States government, prepayment speeds and illiquidity discounts are considered significant unobservable inputs. These additional inputs are generally unobservable, and therefore, auction rate securities are included in Level 3.

Derivative Instruments: Derivative instruments that are traded on an exchange are valued using quoted market prices and are included in Level 1. Derivative instruments that are not traded on an exchange are valued using conventional calculations/models that are primarily based on observable inputs, such as foreign currency exchange rates, volatilities and interest rates, and therefore, such derivative instruments are included in Level 2.

Other Investments and Other Liabilities: Other investments and other liabilities included in Level 1 are comprised of our deferred compensation plan liabilities and related assets, which consist of mutual funds and are included in other assets. Other investments and other liabilities included in Level 3 are comprised of convertible debt instruments issued by private companies and contingent consideration related to business combinations, respectively. The fair value of convertible debt instruments is estimated based on the estimated timing and amount of future cash flows, as well as assumptions related to liquidity, default likelihood and recovery. The fair value of contingent consideration related to business combinations is primarily estimated using either a real options or discounted cash flow model, which includes inputs, such as projected financial information, market volatility, discount rates and timing of contractual payments. The inputs we use to estimate the fair values of the convertible debt instruments and contingent consideration are generally unobservable, and therefore, they are included in Level 3.

Allowances for Doubtful Accounts. We maintain allowances for doubtful accounts for estimated losses resulting from receivables that will not be collected. We determine the allowance based on customer credit-worthiness, historical payment experience, the age of outstanding receivables and collateral, to the extent applicable.

Inventories. Inventories are valued at the lower of cost and net realizable value using the first-in, first-out method. Recoverability of inventories is assessed based on review of future customer demand that considers multiple factors, including committed purchase orders from customers as well as purchase commitment projections provided by customers and our own forecast of customer demand, among other things.

Property, Plant and Equipment. Property, plant and equipment are recorded at cost and depreciated or amortized using the straight-line method over their estimated useful lives. Upon the retirement or disposition of property, plant and equipment, the related cost and accumulated depreciation or amortization are removed, and a gain or loss is recorded, when appropriate. Buildings on owned land are depreciated over 30 years, and building improvements are depreciated over 15 years. Leasehold improvements and buildings on leased land are amortized over the shorter of their estimated useful lives, not to exceed 15 years and 30 years, respectively, or the remaining term of the related lease. Other property, plant and equipment have useful lives ranging from 2 to 25 years. Leased property meeting certain capital lease criteria is capitalized, and the net present value of the related lease payments is recorded as a liability. Amortization of assets under capital leases is recorded using the straight-line method over the shorter of the estimated useful lives or the lease terms. Maintenance, repairs and minor renewals or betterments are charged to expense as incurred.

Goodwill and Other Intangible Assets. Goodwill represents the excess of purchase price over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Acquired intangible assets other than goodwill are amortized over their useful lives unless the lives are determined to be indefinite. For intangible assets purchased in a business combination, the estimated fair values of the assets received are used to establish their recorded values. For intangible assets acquired in a non-monetary exchange, the estimated fair values of the assets transferred (or the estimated fair values of the assets received, if more clearly evident) are used to establish their recorded values, unless the values of neither the assets received nor the assets transferred are determinable within reasonable limits, in which case the assets received are measured based on the carrying values of the assets transferred. Valuation techniques consistent with the market approach, income approach and/or cost approach are used to measure fair value.

Impairment of Goodwill, Other Indefinite-Lived Assets and Long-Lived Assets. Goodwill and other indefinite-lived intangible assets are tested annually for impairment in the fourth fiscal quarter and in interim periods if events or changes in circumstances indicate that the assets may be impaired. If a qualitative assessment is used and we determine that the fair value of a reporting unit or indefinite-lived intangible asset is more likely than not (i.e., a likelihood of more than 50%) less than its carrying amount, a quantitative impairment test will be performed. If goodwill is quantitatively assessed for impairment and a reporting unit's carrying value exceeds its fair value, the difference is recorded as an impairment. Other indefinite-lived intangible assets are quantitatively assessed for impairment, if necessary, by comparing their estimated fair values to their carrying values. If the carrying value exceeds the fair value, the difference is recorded as an impairment.

Long-lived assets, such as property, plant and equipment and intangible assets subject to amortization, are reviewed for impairment when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Recoverability of assets to be held and used is measured by comparing the carrying amount of an asset or asset group to estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset or asset group exceeds its estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset or asset group exceeds the estimated fair value of the asset or asset group. Long-lived assets to be disposed of by sale are reported at the lower of their carrying amounts or their estimated fair values less costs to sell and are not depreciated.

Revenue Recognition. As a result of the adoption of ASC 606, we revised our revenue recognition policy beginning in fiscal 2019 as follows.

We derive revenues principally from sales of integrated circuit products and licensing of our intellectual property. We also generate revenues from licensing system software and by performing development and other services and from other product sales. The timing of revenue recognition and the amount of revenue actually recognized in each case depends upon a variety of factors, including the specific terms of each arrangement and the nature of our performance obligations.

Revenues from sales of our products are recognized upon transfer of control to the customer, which is generally at the time of shipment. Revenues from providing services are typically recognized over time as our performance obligation is satisfied. Revenues from providing services and licensing system software were each less than 5% of total revenues for all periods presented.

We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Licensees pay royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. Sales-based royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets, laptops and smartwatches, and provide for a maximum royalty amount payable per device. We estimate and recognize sales-based royalties on such licensed products in the period in which the associated sales occur, subject to certain constraints on our ability to estimate such royalties. Our estimates of sales-based royalties are based largely on an assessment of the volume of devices supplied into the market that incorporate or use our licensed intellectual property. We estimate sales-based royalties taking into consideration the mix of such sales on a licensee-by-licensee basis, as well as the licensees' average wholesale prices of such products, and consider all information (historical, current and forecasted, which may include certain estimates from licensees) that is reasonably available to us. We also consider in our estimates of sales-based royalties any changes in pricing we plan or expect to make. Our licensees, however, do not report and pay royalties owed for sales in any given quarter until after the conclusion of that quarter, which is generally the following quarter. As a result of recognizing revenues in the period in which the licensees' sales occur using estimates, adjustments to revenues are required in subsequent periods to reflect changes in estimates as new information becomes available, primarily resulting from actual amounts reported by our licensees.

License agreements that require payment of license fees contain a single performance obligation that represents ongoing access to a portfolio of intellectual property over the license term since such agreements provide the licensee the right to access a portfolio of intellectual property that exists at inception of the license agreement and to updates and new intellectual property that is added to the licensed portfolio during the term of the agreement that are highly interdependent or interrelated. Since we expect to expend efforts to develop and transfer updates to our licensed portfolio on an even basis, license fees are recognized as revenues on a straight-line basis over the estimated period of benefit of the license to the licensee.

We account for a contract with a customer/licensee when it is legally enforceable, the parties are committed to perform their respective obligations, the rights of the parties regarding the goods and/or services to be transferred are identified, payment terms are identified, the contract has commercial substance and collectability of substantially all of the consideration is probable. If all such conditions are not met, revenues and any associated receivables are generally not recognized until such time that the required conditions are met. Cash collected from customers prior to a contract existing is recorded to other customer-related liabilities in other current liabilities.

From time to time, regulatory authorities investigate our business practices, particularly with respect to our licensing business, and institute proceedings against us. Depending on the matter, various remedies that could result from an unfavorable resolution include, among others, the loss of our ability to enforce one or more of our patents; injunctions; monetary damages or fines or other orders to pay money; the issuance of orders to cease certain conduct or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers, sell chipsets to unlicensed original equipment manufacturers (OEMs) or modify or renegotiate some or all of our existing license agreements; and determinations that some or all of our license agreements are invalid or unenforceable. Additionally, from time to time, companies initiate various strategies in an attempt to negotiate, renegotiate, reduce and/or eliminate their need to pay royalties to us for the use of our intellectual property, which may include disputing, underreporting, underpaying, not reporting and/or not paying royalties owed to us under their license agreements with us, or reporting to us in a manner that is not in compliance with their contractual obligations. In such cases, we estimate and recognize licensing revenues only when we have a contract, as defined in the revenue recognition guidance, and to the extent it is probable that a significant reversal of cumulative revenues recognized will not occur, both of which may require significant judgment. We analyze the risk of a significant revenue reversal considering both the likelihood and magnitude of the reversal and, if necessary, constrain the amount of estimated revenues recognized in order to mitigate this risk, which may result in recognizing revenues less than amounts contractually owed to us.

In May 2019, in *United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated*, the court issued an Order ruling against us and imposing certain injunctive relief (Note 7). In August 2019, the U.S. Court of Appeals for the Ninth Circuit granted in its entirety Qualcomm's request for a partial stay of the injunction. While we believe that our business practices do not violate either antitrust law or our FRAND (fair, reasonable and non-discriminatory) licensing commitments, significant evaluation and judgment were required in determining the impact of such ruling on the amount of licensing revenues estimated and recognized in fiscal 2019. This included, among other items: (i) evaluating whether our license agreements remain valid and enforceable, (ii) evaluating licensees' conduct and whether they remain committed to perform their respective obligations and (iii) determining the expected impact, if any, to revenues of any license agreements that may be renegotiated and/or are newly entered into. Based on this evaluation, the impact of the ruling was not material to QTL licensing revenues in fiscal 2019 based on facts and factors currently known by us. As new information becomes available, we may be required to make adjustments to revenues in subsequent periods to reflect changes in estimates and/or this matter could have a material adverse effect on our ability to recognize future licensing revenues.

We measure revenues (including our estimates of sales-based royalties) based on the amount of consideration we expect to receive in exchange for products or services. We record reductions to revenues for customer incentive arrangements, including volume-related and other pricing rebates and cost reimbursements for marketing and other activities involving certain of our products and technologies, in the period that the related revenues are earned. The charges for such arrangements are recorded as a reduction to accounts receivable, net or as other current liabilities based on whether we have the intent and contractual right of offset. Certain of these charges are considered variable consideration and are included in the transaction price primarily based on estimating the most likely amount expected to be provided to the customer/licensee.

Revenues recognized from sales of our products and sales-based royalties are generally included in accounts receivable, net (including unbilled receivables) based on our unconditional right to payment for satisfied or partially satisfied performance obligations.

We disaggregate our revenues by segment (Note 8) and type of product and services (as presented on our consolidated statement of operations), as we believe this best depicts how the nature, amount, timing and uncertainty of our revenues and cash flows are affected by economic factors. Substantially all of QCT's revenues consist of equipment revenues that are recognized at a point in time, and substantially all of QTL's revenues represent licensing revenues that are recognized over time.

Revenues recognized from performance obligations satisfied (or partially satisfied) in previous periods were $4.1 billion for fiscal 2019, and primarily related to licensing revenues of $4.7 billion recognized in the third quarter of fiscal 2019 (a portion of which was attributable to fiscal 2019) resulting from the settlement with Apple and its contract manufacturers, consisting of a payment from Apple and the release of certain of our obligations to pay Apple and the contract manufacturers customer-related liabilities.

Unearned revenues (which are considered contract liabilities) consist primarily of license fees for intellectual property with continuing performance obligations. In fiscal 2019, we recognized revenues of $481 million that were recorded as unearned revenues at October 1, 2018.

Remaining performance obligations, substantially all of which are included in unearned revenues, represent the aggregate amount of the transaction price of certain customer contracts yet to be recognized as revenues as of the end of the reporting period and exclude revenues related to (a) contracts that have an original expected duration of one year or less and (b) sales-based royalties (i.e., future royalty revenues) pursuant to our license agreements. Our remaining performance obligations are primarily comprised of certain customer contracts for which QTL received license fees upfront. At September 29, 2019, we had $1.7 billion of remaining performance obligations, of which $544 million, $453 million, $440 million, $196 million and $50 million is expected to be recognized as revenues for each of the subsequent five years from fiscal 2020 through 2024, respectively, and $27 million thereafter.

Concentrations. A significant portion of our revenues are concentrated with a small number of customers/licensees of our QCT and QTL segments. Revenues from three customers/licensees comprised 24%, 15% and 10% of total consolidated revenues in fiscal 2019 and 11%, 16% and 11% in fiscal 2018. Revenues from two customers/licensees comprised 18% and 17% in fiscal 2017. Revenues in 2018 and 2017 were negatively impacted by our prior dispute with Apple Inc. and its contract manufacturers (Hon Hai Precision Industry Co., Ltd./Foxconn, its affiliates and other suppliers to Apple). Revenues in fiscal 2019 were positively impacted by our settlement of such dispute in the third quarter of fiscal 2019.

We rely on sole- or limited-source suppliers for some products, particularly products in the QCT segment, subjecting us to possible shortages of raw materials or manufacturing capacity. While we have established alternate suppliers for certain technologies that we consider critical, the loss of a supplier or the inability of a supplier to meet performance or quality specifications or delivery schedules could harm our ability to meet our delivery obligations and/or negatively impact our revenues, business operations and ability to compete for future business.

Shipping and Handling Costs. Costs incurred for shipping and handling are included in cost of revenues. Amounts billed to a customer for shipping and handling are reported as revenues.

Share-Based Compensation. Share-based compensation expense for equity-classified awards, principally related to restricted stock units (RSUs), is measured at the grant date, or at the acquisition date for awards assumed in business combinations, based on the estimated fair value of the award and is recognized over the employee's requisite service period. The fair values of RSUs are estimated based on the fair market values of the underlying stock on the dates of grant or dates the RSUs are assumed. If RSUs do not have the right to participate in dividends, the fair values are discounted by the dividend yield. Share-based compensation expense is adjusted to exclude amounts related to share-based awards that are expected to be forfeited.

Legal and Regulatory Proceedings. We are currently involved in certain legal and regulatory proceedings. Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Investigations by antitrust and trade regulation agencies are not conducted in a consistent manner across jurisdictions. Further, each country and agency has different sets of laws, rules and regulations, both substantive and procedural, as well as different legal principles, theories and potential remedies, and some agencies may seek to use the investigation to advance domestic policy goals. Depending on the jurisdiction, these investigations can involve non-transparent procedures under which we may not receive access to evidence relied upon by the enforcement agency or that may be exculpatory and may not be informed of the specific legal theories or evidence considered or relied upon by the agency. Unlike in civil litigation in the United States, in foreign proceedings, we may not be entitled to discovery or depositions, allowed to cross-examine witnesses or confront our accusers. As a result, we may not be aware of, and may not be entitled to know, all allegations against us, or the information or documents provided to, or discovered or prepared by, the agency. Accordingly, we may have little or no idea what an agency's intent is with respect to liability, penalties or the timing of a decision. In many cases the agencies are given significant discretion, and any available precedent may have limited, if any, predictive value in their jurisdictions, much less in other jurisdictions. Accordingly, we cannot predict the outcome of these matters.

If there is at least a reasonable possibility that a material loss may have been incurred associated with pending legal and regulatory proceedings, we disclose such fact, and if reasonably estimable, we provide an estimate of the possible loss or range of possible loss. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of loss can be reasonably estimated with no best estimate in the range, we record the minimum estimated liability. As additional information becomes available, we assess the potential liability related to pending legal and regulatory proceedings and revise our estimates and update our disclosures accordingly. Our legal costs associated with defending ourself are recorded to expense as incurred.

Foreign Currency. Certain foreign subsidiaries use a local currency as the functional currency. Resulting translation gains or losses are recorded as a component of accumulated other comprehensive income. Transaction gains or losses related to balances denominated in a currency other than the functional currency are recognized in the consolidated statements of operations.

Income Taxes. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. We record a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. We include interest and penalties related to income taxes, including unrecognized tax benefits, within income tax expense. We classify all deferred tax assets and liabilities as noncurrent in the consolidated balance sheets.

Our income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service and other tax authorities. In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. While we believe we have appropriate support for the positions taken on our tax returns, we regularly assess the potential outcomes of examinations by tax authorities in determining the adequacy of our provision for income taxes. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known.

We recognize excess tax benefits and shortfall tax detriments associated with share-based awards in the consolidated statements of operations, as a component of income tax expense, when realized.

Earnings (Loss) Per Common Share. Basic earnings (loss) per common share is computed by dividing net income (loss) attributable to Qualcomm by the weighted-average number of common shares outstanding during the reporting period. Diluted earnings per common share is computed by dividing net income attributable to Qualcomm by the combination of dilutive common share equivalents, comprised of shares issuable under our share-based compensation plans and shares subject to accelerated share repurchase agreements, if any, and the weighted-average number of common shares outstanding during the reporting period. The accelerated share repurchase agreements were entered into in fiscal 2018 (Note 4) and, due to the net loss in fiscal 2018, all of the common share equivalents issuable under share-based compensation plans had an anti-dilutive effect and were therefore excluded from the computation of diluted loss per share. The following table provides information about the diluted earnings per share calculation (in millions):

	2019	2018	2017
Dilutive common share equivalents included in diluted shares	10.4	—	13.0

Shares of common stock equivalents not included because the effect would be anti-dilutive or certain performance conditions were not satisfied at the end of the period	7.5	51.2	3.0

Recent Accounting Pronouncements Not Yet Adopted.

Leases: In February 2016, the FASB issued new accounting guidance related to leases that outlines a comprehensive lease accounting model and supersedes the current lease accounting guidance. The new accounting guidance requires lessees to recognize right-of-use assets and corresponding lease liabilities on the balance sheet for leases with a lease term of greater than 12 months. It also changes the definition of a lease and expands the disclosure requirements of lease arrangements. We will adopt the new accounting guidance in the first quarter of fiscal 2020 using the modified retrospective approach and will not restate comparative periods. In addition, we will elect certain practical expedients. We do not expect finance leases to be material at the time of adoption. We currently expect to record lease assets and liabilities of approximately $400 million to $500 million on our consolidated balance sheet upon adoption. We do not expect the adoption of the new accounting guidance will have a material impact on our consolidated statements of operations or consolidated statements of cash flows.

Financial Assets: In June 2016, the FASB issued new accounting guidance that changes the accounting for recognizing impairments of financial assets. Under the new accounting guidance, credit losses for financial assets held at amortized cost will be estimated based on expected losses rather than the current incurred loss impairment model. The new accounting guidance also modifies the impairment model for available-for-sale debt securities. The new accounting guidance generally requires the modified retrospective transition method, with the cumulative effect of applying the new accounting guidance recognized as an adjustment to opening retained earnings in the year of adoption, except for certain financial assets where the prospective transition method is required, such as available-for-sale debt securities for which an other-than-temporary impairment has been recorded. We will adopt the new accounting guidance in the first quarter of fiscal 2021, and the impact of this new accounting guidance will largely depend on the composition and credit quality of our investment portfolio, as well as economic conditions at the time of adoption.

Note 2. Composition of Certain Financial Statement Items

Accounts Receivable (in millions)

	September 29, 2019	September 30, 2018
Trade, net of allowances for doubtful accounts of $47 and $56, respectively	$ 1,046	$ 2,667
Unbilled receivables	1,411	201
Other	14	36
	$ 2,471	$ 2,904

The increase in unbilled receivables was primarily due to the adoption of new revenue recognition guidance in fiscal 2019 (Note 1). Accounts receivable, trade at September 30, 2018 included approximately $960 million related to the short payment in the second quarter of fiscal 2017 of royalties reported by and deemed collectible from Apple's contract manufacturers. This same amount was recorded in customer-related liabilities (in other current liabilities) for Apple, since we did not have the contractual right to offset these amounts. In the third quarter of fiscal 2019, we entered into settlement agreements with Apple and its contract manufacturers to dismiss all outstanding litigation between the parties, and as a result, these amounts, as well as others, were settled.

Inventories (in millions)

	September 29, 2019	September 30, 2018
Raw materials	$ 77	$ 72
Work-in-process	667	715
Finished goods	656	906
	$ 1,400	$ 1,693

Property, Plant and Equipment (in millions)	**September 29, 2019**	**September 30, 2018**
Land	$ 170	$ 186
Buildings and improvements	1,546	1,575
Computer equipment and software	1,356	1,419
Machinery and equipment	4,007	3,792
Furniture and office equipment	86	85
Leasehold improvements	301	325
Construction in progress	182	79
	7,648	7,461
Less accumulated depreciation and amortization	(4,567)	(4,486)
	$ 3,081	$ 2,975

Depreciation and amortization expense related to property, plant and equipment for fiscal 2019, 2018 and 2017 was $674 million, $776 million and $684 million, respectively.

Goodwill and Other Intangible Assets. We allocate goodwill to our reporting units for annual impairment testing purposes. The following table presents the goodwill allocated to our reportable and nonreportable segments, as described in Note 8, as well as the changes in the carrying amounts of goodwill during fiscal 2019 and 2018 (in millions):

	QCT	**QTL**	**Nonreportable Segments**	**Total**
Balance at September 24, 2017	$ 5,581	$ 741	$ 301	$ 6,623
Impairments (Note 10)	—	(22)	(107)	(129)
Other (1)	6	(1)	(1)	4
Balance at September 30, 2018 (2)	5,587	718	193	6,498
Acquisitions	18	—	—	18
Impairments (Note 10)	—	—	(146)	(146)
Other (1)	(40)	(1)	(47)	(88)
Balance at September 29, 2019 (2)	$ 5,565	$ 717	$ —	$ 6,282

(1) Includes changes in goodwill amounts resulting from the sale of our mobile health nonreportable segment in fiscal 2019, foreign currency translation and purchase accounting adjustments.

(2) Cumulative goodwill impairments were $812 million and $666 million at September 29, 2019 and September 30, 2018, respectively.

The components of other intangible assets, net were as follows (in millions):

	September 29, 2019			**September 30, 2018**		
	Gross Carrying Amount	**Accumulated Amortization**	**Weighted-average amortization period (years)**	**Gross Carrying Amount**	**Accumulated Amortization**	**Weighted-average amortization period (years)**
Technology-based	$ 5,958	$ (3,851)	10	$ 6,334	$ (3,461)	10
Other	134	(69)	9	149	(67)	8

	$ 6,092	$ (3,920)	10	$ 6,483	$ (3,528)	10

All of these intangible assets are subject to amortization and the amortization expense related to these intangible assets was $727 million, $785 million and $777 million for fiscal 2019, 2018 and 2017, respectively. Amortization expense related to these intangible assets is expected to be $610 million, $496 million, $399 million, $275 million and $121 million for each of the five years from fiscal 2020 through 2024, respectively, and $271 million thereafter. At September 29, 2019 and September 30, 2018, all acquired in-process research and development projects were completed and are being amortized over their useful lives.

Equity Method and Non-marketable Equity Investments. The carrying values of our equity method and non-marketable equity investments are recorded in other noncurrent assets and were as follows (in millions):

	September 29, 2019	September 30, 2018
Equity method investments	$ 343	$ 402
Non-marketable equity investments	787	650
	$ 1,130	$ 1,052

Transactions with equity method investees are considered related party transactions. Revenues from certain services contracts were $152 million and $100 million with one of our equity method investees in fiscal 2019 and 2018, respectively, and revenues from certain license and services contracts were $165 million with two of our equity method investees in fiscal 2017. We eliminate unrealized profit or loss related to such transactions in relation to our ownership interest in the investee, which is recorded as a component of equity in net losses in investees in investment and other income, net. At September 29, 2019 and September 30, 2018, we had no accounts receivable from these equity method investees.

During fiscal 2019, non-marketable debt and equity securities (non-cash consideration) with an aggregate estimated fair value of $98 million were received related to a development contract with one of our equity method investees, which was recognized as revenues in fiscal 2019. In addition, during fiscal 2019, non-marketable equity securities (non-cash consideration) with an estimated fair value of $53 million were received in connection with the sale of certain assets as part of the Cost Plan (Note 10).

Other Current Liabilities (in millions)

	September 29, 2019	September 30, 2018
Customer incentives and other customer-related liabilities	$ 1,129	$ 3,500
Accrual for EC fines (Note 7)	1,379	1,167
Income taxes payable	480	453
RF360 Holdings Put and Call Option (Note 9)	—	1,137
Other	470	721
	$ 3,458	$ 6,978

Accumulated Other Comprehensive Income. Changes in the components of accumulated other comprehensive income, net of income taxes, in stockholders' equity during fiscal 2019 were as follows (in millions):

	Foreign Currency Translation Adjustment	Noncredit Other-than-Temporary Impairment Losses and Subsequent Changes in Fair Value for Certain Available-for-Sale Debt Securities	Net Unrealized Gains (Losses) on Other Available-for-Sale Securities	Net Unrealized Gain (Loss) on Derivative Instruments	Other Gains (Losses)	Total Accumulated Other Comprehensive Income
Balance at September 30, 2018	$ 11	$ 23	$ 243	$ (13)	$ 1	$ 265
Other comprehensive (loss) income before reclassifications	(110)	—	(6)	26	(19)	(109)
Reclassifications from accumulated other comprehensive income	—	—	(51)	(5)	—	(56)
Other comprehensive (loss) income	(110)	—	(57)	21	(19)	(165)
Balance at September 29, 2019	$ (99)	$ 23	$ 186	$ 8	$ (18)	$ 100

Reclassifications from accumulated other comprehensive income included adjustments of $51 million to the opening retained earnings balance as a result of the adoption of new accounting guidance in the first quarter of fiscal 2019 related to financial instruments and hedge instruments (Note 1). Reclassifications from accumulated other comprehensive income (excluding adjustments to opening retained earnings) related to available-for-sale securities were negligible during fiscal 2019 and 2018. Reclassifications from accumulated other comprehensive income related to available-for-sale securities were $201 million during fiscal 2017 and were recorded in investment and other income, net. Reclassifications from accumulated other comprehensive income related to foreign currency translation adjustments and derivative instruments were negligible for all periods presented.

Share-based compensation expense. Total share-based compensation expense, related to all of our share-based awards, was comprised as follows (in millions):

	2019	2018	2017
Cost of revenues	$ 35	$ 38	$ 38
Research and development	725	594	588
Selling, general and administrative	277	251	288
Share-based compensation expense before income taxes	1,037	883	914
Related income tax benefit	(184)	(140)	(161)
	$ 853	$ 743	$ 753

Other Income, Costs and Expenses. Other expenses in fiscal 2019 consisted of a $275 million charge for the fine imposed by the European Commission (EC) related to the Icera complaint (2019 EC fine) (Note 7) and $213 million in net restructuring and restructuring-related charges related to our Cost Plan (Note 10), partially offset by a $43 million gain due to the partial recovery of a fine we previously paid to the Korea Fair Trade Commission (KFTC) and a $31 million gain related to a favorable legal settlement.

Other expenses in fiscal 2018 consisted of a $2.0 billion charge related to a fee paid in connection with the termination of our purchase agreement to acquire NXP, a $1.2 billion charge for the fine imposed by the EC related to an investigation (2018 EC fine) (Note 7) and $629 million in restructuring and restructuring-related charges related to our Cost Plan, partially offset by a $676 million benefit related to the settlement of the Taiwan Fair Trade Commission (TFTC) investigation.

Other expenses for fiscal 2017 consisted of a $927 million charge related to the a fine imposed by the KFTC (Note 7), including related foreign currency losses, a $778 million charge related to the TFTC fine and $37 million in restructuring and restructuring-related charges related to our Strategic Realignment Plan that was completed in fiscal 2017.

Investment and Other Income, Net (in millions)

	2019	2018	2017
Interest and dividend income	$ 316	$ 625	$ 619
Net gains on marketable securities	288	41	456
Net gains on other investments	68	83	74
Impairment losses on marketable securities and other investments	(135)	(75)	(177)
Net (losses) gains on derivative instruments	(14)	(27)	32
Equity in net losses of investees	(93)	(145)	(74)
Net gains (losses) on foreign currency transactions	11	37	(30)
	$ 441	$ 539	$ 900

Net gains on marketable securities included realized gains and losses of available-for-sale debt securities. During fiscal 2019 and 2018, gross realized gains or losses on sales of available-for-sale debt securities were negligible. During fiscal 2017, gross realized gains and losses on sales of available-for-sale debt securities were $361 million and $98 million, respectively.

Note 3. Income Taxes

The components of the income tax provision were as follows (in millions):

	2019	2018	2017
Current provision (benefit):			
Federal	$ 1,563	$ 2,559	$ 72
State	2	(1)	3
Foreign	(407)	777	1,256
	1,158	3,335	1,331
Deferred provision (benefit):			
Federal	2,037	1,846	(598)
State	17	1	4
Foreign	(117)	174	(194)
	1,937	2,021	(788)
	$ 3,095	$ 5,356	$ 543

The foreign component of the income tax provision (benefit) included foreign withholding taxes on royalty revenues included in U.S. earnings.

The components of income before income taxes by U.S. and foreign jurisdictions were as follows (in millions):

	2019	2018	2017
United States	$ 7,042	$ (1,834)	$ (795)
Foreign	439	2,226	3,782
	$ 7,481	$ 392	$ 2,987

In fiscal 2018 and 2017, the foreign component of income before income taxes in foreign jurisdictions consisted primarily of income earned in Singapore.

The following is a reconciliation of the expected statutory federal income tax provision to our actual income tax provision (in millions):

	2019	2018	2017
Expected income tax provision at federal statutory tax rate	$ 1,571	$ 97	$ 1,045
State income tax provision, net of federal benefit	10	2	8
Derecognition of deferred tax asset on distributed intellectual property	2,472	—	—
Benefits from establishing new U.S. net deferred tax assets	(570)	—	—
Benefits from foreign-derived intangible income (FDII) deduction	(419)	—	—
Benefits related to research and development tax credits	(110)	(136)	(81)
Benefits from foreign income taxed at other than U.S. rates	(54)	(834)	(963)
Nondeductible charges (reversals) related to the EC, KFTC and TFTC investigations	51	(119)	363
Impact of changes in tax reserves and audit settlements for prior year tax positions	20	—	111
Taxes on undistributed foreign earnings	8	87	—
Toll Charge from U.S. tax reform	—	5,236	—
Valuation allowance on deferred tax assets related to NXP termination fee	—	494	—
Remeasurement of deferred taxes due to changes in statutory rate due to U.S. tax reform	—	443	—
Other	116	86	60
	$ 3,095	$ 5,356	$ 543

The 2017 Tax Cuts and Jobs Act (the Tax Legislation), which was enacted during the first quarter of fiscal 2018, significantly revised the United States corporate income tax by, among other things, lowering the corporate income tax rate to 21% and imposing a one-time repatriation tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (the Toll Charge). The Tax Legislation fundamentally changed the taxation of multinational entities, including a shift from a system of worldwide taxation with deferral to a hybrid territorial system, featuring a participation exemption regime with current taxation of certain foreign income, a minimum tax on low-taxed foreign earnings and new measures to deter base erosion and promote U.S. production. As a fiscal-year taxpayer, certain provisions of the Tax Legislation became effective starting at the beginning of fiscal 2019, including GILTI (global intangible low-taxed income), a new tax on income of foreign corporations, BEAT (base-erosion and anti-abuse tax) and FDII (foreign-derived intangible income). In response to the Tax Legislation and to better align our profits with our activities, we implemented certain tax restructuring in fiscal 2018 and 2019. As a result, beginning in fiscal 2019, substantially all of our income is in the U.S., of which a significant portion qualifies for preferential treatment as FDII at a 13% effective tax rate. The impact of GILTI and BEAT is negligible. Accordingly, our annual effective tax rate for fiscal 2019 reflected the effects of these provisions of the Tax Legislation. Our annual effective tax rate for fiscal 2018 reflected a blended federal statutory rate of approximately 25%.

As a result of the Tax Legislation, in fiscal 2019, several of our foreign subsidiaries made tax elections to be treated as U.S. branches for federal income tax purposes (commonly referred to as “check-the-box” elections) effective beginning in fiscal 2018 and 2019. Although beginning in fiscal 2019 the income of these entities will be included in our consolidated U.S. tax return, we believe that by treating these foreign subsidiaries as U.S. branches for federal income taxes, rather than controlled foreign corporations, we will significantly reduce the risk of being subject to GILTI and BEAT taxes. As a result of making these check-the-box elections, we recorded a tax benefit of $570 million in the first quarter of fiscal 2019 due to establishing new U.S. net deferred tax assets resulting from the difference between the GAAP basis and the U.S. federal tax carryover basis of the existing assets and liabilities of those foreign subsidiaries, primarily related to customer incentive liabilities that have not been deducted for tax purposes. Additionally, during fiscal 2018, one of our foreign subsidiaries distributed certain intellectual property to a

U.S. subsidiary resulting in a difference between the GAAP basis and the U.S. federal tax basis of the distributed intellectual property. Upon adoption of new accounting guidance in the first quarter of fiscal 2019, we recorded a deferred tax asset of approximately $2.6 billion primarily related to the distributed intellectual property, with an adjustment to opening retained earnings (Note 1). During the third quarter of fiscal 2019, the United States Treasury Department issued new temporary regulations that resulted in a change to the deductibility of dividend income received by a U.S. stockholder from a foreign corporation. As a result of this change, pursuant to an agreement with the Internal Revenue Service, we relinquished the federal tax basis step-up of intellectual property that was distributed in fiscal 2018 by one of our foreign subsidiaries to a U.S. subsidiary. Therefore, the related deferred tax asset was derecognized, resulting in a $2.5 billion charge to income tax expense in fiscal 2019.

In the fourth quarter of fiscal 2019, as a result of recent court rulings in Korea, among other factors, we decided to apply for a partial refund claim for taxes previously withheld from licensees in Korea on payments due under their license agreements to which we have claimed a foreign tax credit in the United States. As a result, we established a noncurrent income taxes receivable of $1.4 billion (recorded in other assets and included as foreign current benefit in the components of the income tax provision) and a noncurrent liability for uncertain tax benefits of $1.4 billion (recorded in other liabilities and included as federal current provision in the components of the income tax provision).

Income tax expense for fiscal 2019 also reflected benefits from our FDII deduction (including the impact of the Apple settlement) and research and development credits, as well as the impact of the 2019 EC fine, which is not deductible for tax purposes.

In fiscal 2018, as a result of the Tax Legislation, we recorded a charge of $5.7 billion to income tax expense, comprised of $5.2 billion related to the estimated Toll Charge and $438 million resulting from the remeasurement of U.S. deferred tax assets and liabilities that existed at the end of fiscal 2017 at a lower enacted corporate income tax rate, which included a $135 million tax benefit recorded in fiscal 2018 related to the remeasurement of a U.S. deferred tax liability that was established as a result of a change in one of our tax positions due to Tax Legislation. After application of certain tax credits, the total cash payment is expected to be $2.5 billion. The first payment was made on January 15, 2019. At September 29, 2019, we estimated remaining future payments of $2.3 billion for the Toll Charge, after application of certain tax credits (including excess tax credits generated in fiscal 2019), which is payable in installments over the next seven years. At September 29, 2019, $209 million was included in other current liabilities, reflecting the next installment due in January 2020.

Income tax expense for fiscal 2018 was also impacted by the charge recorded in the fourth quarter of fiscal 2018 related to the termination fee paid to NXP, which did not result in a tax benefit after the consideration of realizability of such loss. Fiscal 2018 and 2017 income tax expense was impacted by the EC, KFTC and TFTC fines, and settlement with the TFTC, which were not deductible for tax purposes (or taxable in the case of the settlement) and portions of which were attributable to foreign jurisdictions and to the United States. These impacts were partially offset in fiscal 2018 and 2017 by lower U.S. revenues primarily related to decreased royalty revenues from Apple's contract manufacturers and, for fiscal 2017, a payment to BlackBerry in connection with an arbitration decision.

Income tax expense for fiscal 2017 reflected an increase in our Singapore tax rate as a result of the expiration of certain of our tax incentives in March 2017, which was substantially offset by tax benefits resulting from the increase in our Singapore tax rate in effect when certain deferred tax assets reversed. During the third quarter of fiscal 2018, we entered into a new tax incentive agreement in Singapore that results in a reduced tax rate from March 2017 through March 2022, provided that we meet specified employment and investment criteria in Singapore. Our Singapore tax rate will increase in March 2022 as a result of expiration of these incentives and again in March 2027 upon the expiration of tax incentives under a prior agreement. During fiscal 2018, one of our Singapore subsidiaries distributed certain intellectual property to a U.S. subsidiary reducing the benefit of these tax incentives almost entirely going forward. Without these tax incentives, our income tax expense would have been higher and impacted earnings (loss) per share attributable to Qualcomm as follows (in millions, except per share amounts):

	2019	2018	2017
Additional income tax expense	$ —	$ 652	$ 493
Reduction to diluted earnings (loss) per share	—	0.45	0.33

We continue to assert that substantially all of our foreign earnings are not indefinitely reinvested. We recorded a charge of $8 million and $87 million to income tax expense in fiscal 2019 and 2018, respectively, related to outside basis differences that are not permanently reinvested. Income tax expense in fiscal 2018 reflected a one-time charge resulting from a change in our assertion as a result of the Tax Legislation, which eliminated certain material tax effects on the repatriation of cash to the United States. At September 29, 2019, we had not recorded a deferred tax liability of approximately $25 million related to foreign withholding taxes on approximately $225 million of undistributed earnings of certain subsidiaries that we continue to consider to be indefinitely reinvested outside the United States. Should we decide to no longer indefinitely reinvest such earnings outside the United States, we would have to adjust the income tax provision in the period we make such determination.

We had deferred tax assets and deferred tax liabilities as follows (in millions):

	September 29, 2019	September 30, 2018
Unused tax credits	$ 1,137	$ 1,044
Accrued liabilities and reserves	648	396
Unused net operating losses	619	696
Unearned revenues	376	478
Unrealized losses on other investments and marketable securities	164	126
Share-based compensation	115	97
Other	144	26
Total gross deferred tax assets	3,203	2,863
Valuation allowance	(1,672)	(1,529)
Total net deferred tax assets	1,531	1,334
Intangible assets	(216)	(322)
Property, plant and equipment	(102)	(49)
Unrealized gains on other investments and marketable securities	(99)	(26)
Accrued withholding taxes	(19)	(90)
Accrued revenues	—	(202)
Other	(2)	—
Total deferred tax liabilities	(438)	(689)
Net deferred tax assets	$ 1,093	$ 645
Reported as:		
Non-current deferred tax assets	$ 1,196	$ 936
Non-current deferred tax liabilities (1)	(103)	(291)
	$ 1,093	$ 645

(1) Non-current deferred tax liabilities were included in other liabilities in the consolidated balance sheets.

At September 29, 2019, we had unused federal net operating loss carryforwards of $188 million expiring from 2021 through 2035, unused state net operating loss carryforwards of $740 million expiring from 2020 through 2039 and unused foreign net operating loss carryforwards of $2.1 billion, of which $1.8 billion expire in 2027. At September 29, 2019, we had unused state tax credits of $1.0 billion, of which substantially all may be carried forward indefinitely, unused federal tax credits of $169 million expiring from 2026 through 2030 and unused tax credits of $34 million in foreign jurisdictions expiring from 2033 through 2039. We do not expect our federal net operating loss carryforwards to expire unused.

At September 29, 2019, we have provided a valuation allowance on certain state tax credits, foreign deferred tax assets, federal capital losses, state net operating losses and federal foreign tax credits of $1.0 billion, $536 million, $83 million, $26 million and $20 million, respectively. The valuation allowances reflect the uncertainties surrounding our ability to generate sufficient future taxable income in certain foreign and state tax jurisdictions to utilize our net operating losses and our ability to generate sufficient capital gains to utilize all capital losses. We believe, more likely than not, that we will have sufficient taxable income after deductions related to share-based awards to utilize our remaining deferred tax assets.

A summary of the changes in the amount of unrecognized tax benefits for fiscal 2019, 2018 and 2017 follows (in millions):

	2019	2018	2017
Beginning balance of unrecognized tax benefits	$ 217	$ 372	$ 271
Additions based on prior year tax positions	1,238	7	92
Reductions for prior year tax positions and lapse in statute of limitations	(3)	(11)	(11)
Additions for current year tax positions	253	18	23
Settlements with taxing authorities	—	(169)	(3)
Ending balance of unrecognized tax benefits	$ 1,705	$ 217	$ 372

Of the $1.7 billion of unrecognized tax benefits, $1.6 billion has been recorded to other noncurrent liabilities. We believe that it is reasonably possible that certain unrecognized tax benefits recorded at September 29, 2019 may result in a cash payment in fiscal 2020. Unrecognized tax benefits at September 29, 2019 included $125 million for tax positions that, if recognized, would impact the effective tax rate. The unrecognized tax benefits differ from the amount that would affect our effective tax rate primarily because the unrecognized tax benefits were included on a gross basis and did not reflect related receivables or secondary impacts such as the federal deduction for state taxes, adjustments to deferred tax assets and the valuation allowance that might be required if our tax positions are sustained. The increase in unrecognized tax benefits in fiscal 2019 was primarily due to our plan to apply for a refund of Korean withholding tax (which had an insignificant impact to our income tax provision). If successful, the refund will result in a corresponding reduction in U.S. foreign tax credits. The decrease in unrecognized tax benefits in fiscal 2018 was primarily due to an agreement reached with the Internal Revenue Service (IRS) related to tax positions on the classification of income in our fiscal 2016 federal income tax return. The increase in unrecognized tax benefits in fiscal 2017 was primarily due to tax positions related to transfer pricing. We believe that it is likely that the total amount of unrecognized tax benefits at September 29, 2019 will increase in fiscal 2020 as licensees in Korea continue to withhold taxes on future payments due under their licensing agreements at a rate higher than we believe is owed; such increase is not expected to have a significant impact on our income tax provision.

We file income tax returns in the United States federal jurisdiction and various state and foreign jurisdictions. We are currently a participant in the IRS Compliance Assurance Process, whereby we and the IRS endeavor to agree on the treatment of all tax issues prior to the tax return being filed. We are no longer subject to U.S. federal income tax examinations for years prior to fiscal 2015. We are subject to examination by the California Franchise Tax Board for fiscal years after 2014. We are also subject to examination in other taxing jurisdictions in the United States and numerous foreign jurisdictions. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds, many of which are open for periods after fiscal 2000. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. At September 29, 2019, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Cash amounts paid for income taxes, net of refunds received, were $1.1 billion, $877 million and $1.0 billion for fiscal 2019, 2018 and 2017, respectively.

Note 4. Capital Stock

Stock Repurchase Program. On July 26, 2018, we announced a stock repurchase program authorizing us to repurchase up to $30 billion of our common stock. The stock repurchase program has no expiration date. In August 2018, we completed a "modified Dutch auction" tender offer and paid an aggregate of $5.1 billion, excluding fees and related expenses, to repurchase 76.2 million shares of our common stock, which were retired, at a price of $67.50 per share.

In September 2018, we entered into three accelerated share repurchase agreements (ASR Agreements) with three financial institutions under which we paid an aggregate of $16.0 billion upfront to the financial institutions and received from them an initial delivery of 178.4 million shares of our common stock, which were retired and recorded as a $12.8 billion reduction to stockholders' equity. The remaining $3.2 billion was recorded as a reduction to stockholders' equity as an unsettled forward contract indexed to our own stock. During September 2019, the ASR Agreements were completed, and an additional 68.7 million shares were delivered to us, which were retired, and the forward contract was settled with no adjustment to stockholders' equity. In total, we purchased 247.1 million shares based on the volume-weighted average stock price of our common stock during the terms of the transactions, less a discount.

During fiscal 2019, 2018 and 2017, we repurchased and retired an additional 27.1 million, 24.2 million and 22.8 million shares of common stock, respectively, for $1.8 billion, $1.4 billion and $1.3 billion, respectively, before commissions. To reflect share repurchases in the consolidated balance sheet, we (i) reduce common stock for the par value of the shares, (ii) reduce paid-in capital for the amount in excess of par to zero during the quarter in which the shares are repurchased and (iii) record the residual amount to retained earnings, if any. At September 29, 2019, $7.1 billion remained authorized for repurchase under our stock repurchase program. Since September 29, 2019, we repurchased and retired 3.9 million shares of common stock for $300 million.

Shares Outstanding. Shares of common stock outstanding at September 29, 2019 were as follows (in millions):

	2019
Balance at beginning of period	1,219
Issued	22
Repurchased	(96)
Balance at end of period	1,145

Dividends. On October 15, 2019, we announced a cash dividend of $0.62 per share on our common stock, payable on December 19, 2019 to stockholders of record as of the close of business on December 5, 2019.

Note 5. Employee Benefit Plans

Employee Savings and Retirement Plan. We have a 401(k) plan that allows eligible employees to contribute up to 85% of their eligible compensation, subject to annual limits. We match a portion of the employee contributions and may, at our discretion, make additional contributions based upon earnings. Our contribution expense was $64 million, $78 million and $76 million in fiscal 2019, 2018 and 2017, respectively.

Equity Compensation Plans. On March 8, 2016, our stockholders approved the Qualcomm Incorporated 2016 Long-Term Incentive Plan (the 2016 Plan), which replaced the Qualcomm Incorporated 2006 Long-Term Incentive Plan (the Prior Plan). Effective on and after that date, no new awards will be granted under the Prior Plan, although all outstanding awards under the Prior Plan will remain outstanding according to their terms and the terms of the Prior Plan. The 2016 Plan provides for the grant of incentive and nonstatutory stock options, stock appreciation rights, restricted stock, unrestricted stock, restricted stock units, performance units, performance shares, deferred compensation awards and other stock-based awards. The share reserve under the 2016 Plan is equal to 90.0 million shares, plus approximately 20.1 million shares that were available for future grant under the Prior Plan on March 8, 2016, for a total of approximately 110.1 million shares initially available for grant under the 2016 Plan. This share reserve is automatically increased as provided in the 2016 Plan by the number of shares subject to stock options that were granted under the Prior Plan and outstanding as of March 8, 2016, which after that date expire or for any reason are forfeited, canceled or terminated, and by two times the number of shares subject to any awards other than stock options that were granted under the Prior Plan and outstanding as of March 8, 2016, which after that date expire, are forfeited, canceled or terminated, fail to vest, are not earned due to any performance goal that is not met, are otherwise reacquired without having become vested, or are paid in cash, exchanged by a participant or withheld by us to satisfy any tax withholding or tax payment obligations related to such award. The Board of Directors may amend or terminate the 2016 Plan at any time. Certain amendments, including an increase in the share reserve, require stockholder approval. At September 29, 2019, approximately 50.4 million shares were available for future grant under the 2016 Plan.

RSUs are share awards that entitle the holder to receive shares of our common stock upon vesting. The RSUs generally include dividend-equivalent rights and vest over periods of three years from the date of grant. A summary of RSU transactions that contain only service requirements to vest for all equity compensation plans follows:

	Number of Shares	Weighted-Average Grant Date Fair Value	Aggregate Intrinsic Value
	(In thousands)		(In billions)
RSUs outstanding at September 30, 2018	23,097	$ 62.12	
RSUs granted	20,879	63.10	
RSUs canceled/forfeited	(2,812)	62.45	
RSUs vested	(14,475)	62.64	
RSUs outstanding at September 29, 2019	26,689	$ 62.57	$ 2.0

The weighted-average estimated fair values of employee RSUs that contain only service requirements to vest granted during fiscal 2018 and 2017 were $62.61 and $66.54 per share, respectively. Upon vesting, we issue new shares of common stock. For the majority of RSUs, shares are issued on the vesting dates net of the amount of shares needed to satisfy statutory tax withholding requirements to be paid by us on behalf of the employees. As a result, the actual number of shares issued will be fewer than the number of RSUs outstanding. The annual pre-vest forfeiture rate for RSUs was estimated to be approximately 7%, 6% and 5% in fiscal 2019, 2018 and 2017, respectively.

At September 29, 2019, total unrecognized compensation expense related to such non-vested RSUs granted prior to that date was $1.1 billion, which is expected to be recognized over a weighted-average period of 1.9 years. The total vest-date fair value of such RSUs that vested during fiscal 2019, 2018 and 2017 was $977 million, $940 million and $820 million, respectively. The total shares withheld to satisfy statutory tax withholding requirements related to all share-based awards were approximately 4.2 million, 4.4 million and 4.2 million in fiscal 2019, 2018 and 2017, respectively, and were based on the value of the awards on their vesting dates as determined by our closing stock price.

The Board of Directors may grant stock options to employees, directors and consultants to purchase shares of our common stock at an exercise price not less than the fair market value of the stock at the date of grant. Stock options vest over periods not exceeding five years and are exercisable for up to ten years from the grant date. Total outstanding stock option shares at September 29, 2019 and September 30, 2018, were 1.1 million and 5.1 million, respectively. The decrease in the number of stock option shares outstanding during fiscal 2019 related primarily to stock options exercised.

The total tax benefits realized, including the excess tax benefits, related to share-based awards during fiscal 2019, 2018 and 2017 were $237 million, $254 million and $301 million, respectively.

Employee Stock Purchase Plan. We have an employee stock purchase plan for eligible employees to purchase shares of common stock at 85% of the lower of the fair market value on the first or the last day of each offering period, which is generally six months. Employees may authorize us to withhold up to 15% of their compensation during any offering period, subject to certain limitations. The employee stock purchase plan includes a non-423(b) plan. On March 23, 2018, our stockholders approved an amendment to the Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan to increase the share reserve by 30.0 million shares. The shares authorized under the plan were approximately 101.7 million at September 29, 2019. The shares reserved for future issuance were approximately 32.8 million at September 29, 2019. During fiscal 2019, 2018 and 2017, approximately 6.1 million, 5.8 million and 5.7 million shares, respectively, were issued under the plan at an average price of $42.13, $49.41 and $45.29 per share, respectively. At September 29, 2019, total unrecognized compensation expense related to non-vested purchase rights granted prior to that date was $27 million. We recorded cash received from the exercise of purchase rights of $257 million, $286 million and $260 million during fiscal 2019, 2018 and 2017, respectively.

Note 6. Debt

Long-term Debt. In May 2015, we issued an aggregate principal amount of $10.0 billion of unsecured floating- and fixed-rate notes (May 2015 Notes) with varying maturities, of which $8.5 billion remained outstanding at September 29, 2019. The proceeds from the May 2015 Notes of $9.9 billion, net of underwriting discounts and offering expenses, were used to fund stock repurchases and other general corporate purposes. In May 2017, we issued an aggregate principal amount of

$11.0 billion of unsecured floating- and fixed-rate notes (May 2017 Notes) with varying maturities, of which $7.0 billion remained outstanding at September 29, 2019. The proceeds from the May 2017 Notes of $10.95 billion, net of underwriting discounts and offering expenses, were intended to be used to finance, in part, a then proposed acquisition and other related transactions and for general corporate purposes.

The following table provides a summary of our long-term debt and current portion of long-term debt (in millions, except percentages):

	September 29, 2019		September 30, 2018	
	Amount	Effective Rate	Amount	Effective Rate
May 2015 Notes				
Floating-rate three-month LIBOR plus 0.55% notes due May 20, 2020	$ 250	2.74%	$ 250	2.93%
Fixed-rate 2.25% notes due May 20, 2020	1,750	2.64%	1,750	3.13%
Fixed-rate 3.00% notes due May 20, 2022	2,000	2.89%	2,000	3.73%
Fixed-rate 3.45% notes due May 20, 2025	2,000	3.46%	2,000	3.46%
Fixed-rate 4.65% notes due May 20, 2035	1,000	4.73%	1,000	4.73%
Fixed-rate 4.80% notes due May 20, 2045	1,500	4.72%	1,500	4.72%
May 2017 Notes				
Floating-rate three-month LIBOR plus 0.73% notes due January 30, 2023	500	3.06%	500	3.14%
Fixed-rate 2.60% notes due January 30, 2023	1,500	2.70%	1,500	2.70%
Fixed-rate 2.90% notes due May 20, 2024	1,500	3.01%	1,500	3.01%
Fixed-rate 3.25% notes due May 20, 2027	2,000	3.45%	2,000	3.46%
Fixed-rate 4.30% notes due May 20, 2047	1,500	4.47%	1,500	4.47%
Total principal	15,500		15,500	
Unamortized discount, including debt issuance costs	(75)		(85)	
Hedge accounting fair value adjustments	9		(50)	
Total long-term debt	$ 15,434		$ 15,365	
Reported as:				
Short-term debt	$ 1,997		$ —	
Long-term debt	13,437		15,365	
Total	$ 15,434		$ 15,365	

At September 29, 2019, future principal payments were $2.0 billion in fiscal 2020, $2.0 billion in fiscal 2022, $2.0 billion in fiscal 2023, $1.5 billion in fiscal 2024 and $8.0 billion after fiscal 2024; no principal payments are due in fiscal 2021. At September 29, 2019 and September 30, 2018, the aggregate fair value of the notes, based on Level 2 inputs, was approximately $16.5 billion and $15.1 billion, respectively.

We may redeem the outstanding fixed-rate notes at any time in whole, or from time to time in part, at specified make-whole premiums as defined in the applicable form of note. We may not redeem the outstanding floating-rate notes prior to maturity. The obligations under the notes rank equally in right of payment with all of our other senior unsecured indebtedness and will effectively rank junior to all liabilities of our subsidiaries.

At September 29, 2019, we had outstanding interest rate swaps with an aggregate notional amount of $1.8 billion, related to the May 2015 Notes, which effectively converted approximately 43% and 50% of the fixed-rate notes due in 2020 and 2022, respectively, into floating-rate notes. The net gains and losses on the interest rate swaps, as well as the offsetting gains or losses on the related fixed-rate notes attributable to the hedged risks, are recorded as interest expense in the current period. We did not enter into interest rate swaps in connection with issuance of the May 2017 Notes.

The effective interest rates for the notes include the interest on the notes, amortization of the discount, which includes debt issuance costs, and if applicable, adjustments related to hedging. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes. Cash interest paid related to our commercial paper program and long-term debt, net of cash received from the related interest rate swaps, was $563 million, $662 million and $313 million during fiscal 2019, 2018 and 2017, respectively.

Commercial Paper Program. We have an unsecured commercial paper program, which provides for the issuance of up to $5.0 billion of commercial paper. Net proceeds from this program are used for general corporate purposes. Maturities of commercial paper can range from 1 day to up to 397 days. At September 29, 2019 and September 30, 2018, we had $499 million and $1.0 billion, respectively, of outstanding commercial paper recorded as short-term debt with a weighted-average interest rate of 2.17% and 2.35%, respectively, which included fees paid to the commercial paper dealers, and weighted-average remaining days to maturity of 41 days and 16 days, respectively. The carrying value of the outstanding commercial paper approximated its estimated fair value at September 29, 2019 and September 30, 2018.

Revolving Credit Facility. We have an Amended and Restated Revolving Credit Facility (Revolving Credit Facility) that provides for unsecured revolving facility loans, swing line loans and letters of credit in an aggregate amount of up to $5.0 billion, of which $530 million and $4.47 billion will expire in February 2020 and November 2021, respectively. Proceeds from the Revolving Credit Facility, if drawn, are expected to be used for general corporate purposes. Loans under the Revolving Credit Facility will bear interest, at our option, at either the reserve-adjusted Eurocurrency Rate or the Base Rate (both of which are determined in accordance with the Revolving Credit Facility), in each case plus an applicable margin based on our long-term unsecured senior, non-credit enhanced debt ratings. The margins over the reserve-adjusted Eurocurrency Rate and the Base Rate will be 0.805% and 0.00%, respectively. The Revolving Credit Facility has a facility fee, which accrues at a rate of 0.07% per annum. At September 29, 2019 and September 30, 2018, we had not borrowed any funds under the Revolving Credit Facility.

Debt Covenants. The Revolving Credit Facility requires that we comply with certain covenants, including one financial covenant to maintain a ratio of consolidated earnings before interest, taxes, depreciation and amortization to consolidated interest expense, as defined in each of the respective agreements, of not less than three to one at the end of each fiscal quarter. We are not subject to any financial covenants under the notes nor any covenants that would prohibit us from incurring additional indebtedness ranking equal to the notes, paying dividends, issuing securities or repurchasing securities issued by us or our subsidiaries. At September 29, 2019 and September 30, 2018, we were in compliance with the applicable covenants under the Revolving Credit Facility.

Note 7. Commitments and Contingencies

Legal and Regulatory Proceedings.

3226701 Canada, Inc. v. QUALCOMM Incorporated et al: On November 30, 2015, a securities class action complaint was filed by purported stockholders of us in the United States District Court for the Southern District of California against us and certain of our current and former officers. On April 29, 2016, the plaintiffs filed an amended complaint. On January 27, 2017, the court dismissed the amended complaint in its entirety, granting leave to amend. On March 17, 2017, the plaintiffs filed a second amended complaint, alleging that we and certain of our current and former officers violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, by making false and misleading statements regarding our business outlook and product development between November 19, 2014 and July 22, 2015. The second amended complaint sought unspecified damages, interest, attorneys' fees and other costs. On May 8, 2017, we filed a motion to dismiss the second amended complaint. On October 20, 2017, the court entered an order granting in part our motion to dismiss, and on November 29, 2017, the court entered an order granting the remaining portions of our motion to dismiss. On December 28, 2017, the plaintiffs filed an appeal to the United States Court of Appeals for the Ninth Circuit (Ninth Circuit). A hearing was held on July 11, 2019, and on July 23, 2019, the Ninth Circuit affirmed the District Court's dismissal of the second amended complaint in its entirety. On August 29, 2019, the Ninth Circuit denied the plaintiffs' request for en banc review. The plaintiffs have until November 27, 2019 to file a petition for certiorari to request that the United States Supreme Court hear the matter or the dismissal becomes final. We believe the plaintiffs' claims are without merit.

Consolidated Securities Class Action Lawsuit: On January 23, 2017 and January 26, 2017, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and certain of our current and former officers and directors. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, and Rule 10b-5 thereunder, by making false and misleading statements and omissions of material fact in connection with certain allegations that we are or were engaged in anticompetitive conduct. The complaints sought unspecified damages, interest, fees and costs. On May 4, 2017, the court consolidated the two actions and appointed lead plaintiffs. On July

3, 2017, the lead plaintiffs filed a consolidated amended complaint asserting the same basic theories of liability and requesting the same basic relief. On September 1, 2017, we filed a motion to dismiss the consolidated amended complaint. On March 18, 2019, the court denied our motion to dismiss the complaint. Discovery has commenced and is scheduled to be completed by March 3, 2020. We believe the plaintiffs' claims are without merit.

In re Qualcomm/Broadcom Merger Securities Litigation (formerly Camp v. Qualcomm Incorporated et al): On June 8, 2018 and June 26, 2018, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and two of our current officers. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, and Rule 10b-5 thereunder, by failing to disclose that we had submitted a notice to the Committee on Foreign Investment in the United States (CFIUS) in January 2018. The complaints sought unspecified damages, interest, fees and costs. On January 22, 2019, the Court appointed the lead plaintiff in the action and designated that the case be captioned "In re Qualcomm/Broadcom Merger Securities Litigation." On March 18, 2019, the plaintiffs filed a consolidated complaint asserting the same basic theories of liability and requesting the same basic relief. On May 10, 2019, we filed a motion to dismiss the consolidated complaint. The court has not yet ruled on our motion. We believe the plaintiffs' claims are without merit.

Consumer Class Action Lawsuit: Since January 18, 2017, a number of consumer class action complaints have been filed against us in the United States District Courts for the Southern and Northern Districts of California, each on behalf of a putative class of purchasers of cellular phones and other cellular devices. At September 29, 2019, twenty-two such cases remain outstanding. In April 2017, the Judicial Panel on Multidistrict Litigation transferred the cases that had been filed in the Southern District of California to the Northern District of California. On May 15, 2017, the court entered an order appointing the plaintiffs' co-lead counsel. On July 11, 2017, the plaintiffs filed a consolidated amended complaint alleging that we violated California and federal antitrust and unfair competition laws by, among other things, refusing to license standard-essential patents to our competitors, conditioning the supply of certain of our baseband chipsets on the purchaser first agreeing to license our entire patent portfolio, entering into exclusive deals with companies, including Apple Inc., and charging unreasonably high royalties that do not comply with our commitments to standard setting organizations. The complaint seeks unspecified damages and disgorgement and/or restitution, as well as an order that we be enjoined from further unlawful conduct. On August 11, 2017, we filed a motion to dismiss the consolidated amended complaint. On November 10, 2017, the court denied our motion, except to the extent that certain claims seek damages under the Sherman Antitrust Act. On July 5, 2018, the plaintiffs filed a motion for class certification, and the court granted that motion on September 27, 2018. On January 23, 2019, the United States Court of Appeals for the Ninth Circuit (Ninth Circuit) granted us permission to appeal the court's class certification order. On January 24, 2019, the court stayed the case pending our appeal. A hearing on our appeal of the class certification order is scheduled for December 2, 2019 before the Ninth Circuit. We believe the plaintiffs' claims are without merit.

Canadian Consumer Class Action Lawsuits: Since November 9, 2017, eight consumer class action complaints have been filed against us in Canada (in the Ontario Superior Court of Justice, the Supreme Court of British Columbia and the Quebec Superior Court), each on behalf of a putative class of purchasers of cellular phones and other cellular devices, alleging various violations of Canadian competition and consumer protection laws. The claims are similar to those in the U.S. consumer class action complaint. The complaints seek unspecified damages. One of the complaints in the Supreme Court of British Columbia has since been discontinued by the plaintiffs. We have not yet answered the complaints. We expect the Ontario and British Columbia complaints will be consolidated into one proceeding in British Columbia with a class certification hearing no earlier than late 2020. Once the certification hearing is scheduled, we expect the court to set a timetable for the exchange of evidence and briefing. As to the complaint filed in Quebec, on April 15, 2019, the Quebec Superior Court held a class certification hearing, and on April 30, 2019, the court issued an order certifying a class. Before the end of calendar 2019, we expect the court to set a timetable for pre-trial steps, including discovery as well as the exchange of expert evidence. We do not expect the trial to occur before 2022. We believe the plaintiffs' claims are without merit.

Korea Fair Trade Commission (KFTC) Investigation: On March 17, 2015, the KFTC notified us that it was conducting an investigation of us relating to the Korean Monopoly Regulation and Fair Trade Act (MRFTA). On December 27, 2016, the KFTC announced that it had reached a decision in the investigation, finding that we violated provisions of the MRFTA. On January 22, 2017, we received the KFTC's formal written decision, which found that the following conducts violate the MRFTA: (i) refusing to license, or imposing restrictions on licenses for, cellular communications standard-essential patents with competing modem chipset makers; (ii) conditioning the supply of modem chipsets to handset suppliers on their execution and performance of license agreements with us; and (iii) coercing agreement terms including portfolio license terms, royalty terms and free cross-grant terms in executing patent license agreements with handset makers. The KFTC's decision orders us to: (i) upon request by modem chipset companies, engage in good-faith negotiations for patent license agreements, without offering unjustifiable conditions, and if necessary submit to a determination of terms by an independent third party; (ii) not demand that handset companies execute and perform under patent license agreements as a precondition for purchasing modem chipsets; (iii) not demand unjustifiable conditions in our license agreements with handset companies, and upon request renegotiate existing patent license agreements; and (iv) notify modem chipset companies and handset companies of the decision and order imposed on us and report to the KFTC new or amended agreements. According to the KFTC's decision, the foregoing will apply to transactions between us and the following enterprises: (i) handset manufacturers headquartered in Korea and their affiliate companies; (ii) enterprises that sell handsets in or to Korea and their affiliate companies; (iii) enterprises that supply handsets to companies referred to in (ii) above and the affiliate companies of such enterprises; (iv) modem chipset manufacturers headquartered in Korea and their affiliate companies; and (v) enterprises that supply modem chipsets to companies referred to in (i), (ii) or (iii) above and the affiliate companies of such enterprises. The KFTC's decision also imposed a fine of 1.03 trillion Korean won (approximately $927 million), which we paid on March 30, 2017.

We believe that our business practices do not violate the MRFTA, and on February 21, 2017, we filed an action in the Seoul High Court to cancel the KFTC's decision. On the same day, we filed an application with the Seoul High Court to stay the decision's remedial order pending the Seoul High Court's final judgment on our action to cancel the KFTC's decision. On September 4, 2017, the Seoul High Court denied our application to stay the remedial order, and on November 27, 2017, the Korea Supreme Court dismissed our appeal of the Seoul High Court's decision on the application to stay. Hearings on our action to cancel the KFTC's decision were held before the Seoul High Court on August 12 and 14, 2019. Under the current procedural plan of the Seoul High Court, we believe these will be the final hearings before that court issues its decision.

Icera Complaint to the European Commission (EC): On June 7, 2010, the EC notified and provided us with a redacted copy of a complaint filed with the EC by Icera, Inc. (subsequently acquired by Nvidia Corporation) alleging that we were engaged in anticompetitive activity. On July 16, 2015, the EC announced that it had initiated formal proceedings in this matter. On July 18, 2019, the EC issued a decision confirming their preliminary view that between 2009 and 2011, we engaged in predatory pricing by selling certain baseband chipsets to two customers at prices below cost with the intention of hindering competition and imposed a fine of approximately 242 million euros. On October 1, 2019, we filed an appeal of the EC's decision with the General Court of the European Union. The court has not yet ruled on our appeal. We believe that our business practices do not violate the EU competition rules.

In the third quarter of fiscal 2019, we recorded a charge of $275 million to other expenses related to such EC fine. We provided a financial guarantee in the first quarter of fiscal 2020 to satisfy the obligation in lieu of cash payment while we appeal the EC's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding. In the fourth quarter of fiscal 2019, we designated the liability as a hedge of our net investment in certain foreign subsidiaries, with gains and losses recorded in accumulated other comprehensive income as a component of the foreign currency translation adjustment. At September 29, 2019, the liability, including related foreign currency gains and accrued interest (which, to the extent they were not related to the net investment hedge, were recorded in investment and other income, net), was $265 million and included in other current liabilities.

European Commission (EC) Investigation: On October 15, 2014, the EC notified us that it was conducting an investigation of us relating to Articles 101 and/or 102 of the Treaty on the Functioning of the European Union (TFEU). On July 16, 2015, the EC announced that it had initiated formal proceedings in this matter. On January 24, 2018, the EC issued a decision finding that pursuant to an agreement with Apple Inc. we paid significant amounts to Apple on the condition that it exclusively use our baseband chipsets in its smartphones and tablets, reducing Apple's incentives to source baseband chipsets from our competitors and harming competition and innovation for certain baseband chipsets, and imposed a fine of 997 million euros. On April 6, 2018, we filed an appeal of the EC's decision with the General Court of the European Union. The court has not yet ruled on our appeal. We believe that our business practices do not violate the EU competition rules.

In the first quarter of fiscal 2018, we recorded a charge of $1.2 billion to other expenses related to such EC fine. We provided financial guarantees in the third quarter of fiscal 2018 to satisfy the obligation in lieu of cash payment while we appeal the EC's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding. In the first quarter of fiscal 2019, we designated the liability as a hedge of our net investment in certain foreign subsidiaries, with gains and losses recorded in accumulated other comprehensive income as a component of the foreign currency translation adjustment. At September 29, 2019, the liability, including related foreign currency gains and accrued interest (which, to the extent they were not related to the net investment hedge, were recorded in investment and other income, net), was $1.11 billion and included in other current liabilities.

United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated: On September 17, 2014, the FTC notified us that it was conducting an investigation of us relating to Section 5 of the Federal Trade Commission Act (FTCA). On January 17, 2017, the FTC filed a complaint against us in the United States District Court for the Northern District of California alleging that we were engaged in anticompetitive conduct and unfair methods of competition in violation of Section 5 of the FTCA by conditioning the supply of cellular modem chipsets on the purchaser first agreeing to a license to our cellular standard-essential patents, paying incentives to purchasers of cellular modem chipsets to induce them to accept certain license terms, refusing to license our cellular standard-essential patents to our competitors, and entering into alleged exclusive dealing arrangements with Apple Inc. The complaint sought a permanent injunction against our alleged violations of the FTCA and other unspecified ancillary equitable relief. On August 30, 2018, the FTC moved for partial summary judgment that our commitments to license our cellular standard-essential patents to the Alliance for Telecommunications Industry Solutions (ATIS) and the Telecommunications Industry Association (TIA) require us to make licenses available to rival sellers of cellular modem chipsets. On November 6, 2018, the court granted the FTC's partial summary judgment motion. Trial was held January 4-29, 2019.

On May 21, 2019, the court issued an Order setting forth its Findings of Fact and Conclusions of Law. The court concluded that we had monopoly power in the CDMA and premium-tier LTE (Long Term Evolution) cellular modem chip markets, and that we had used that power in these two markets to engage in anticompetitive acts, including (1) using threats of lack of access to cellular modem chip supply to coerce OEMs (original equipment manufacturers) to accept license terms that include unreasonably high royalty rates; (2) refusing to license our cellular standard-essential patents to competitors selling cellular modem chips; and (3) entering into exclusive dealing arrangements with OEMs that foreclosed our rivals. The court further found that the royalties we charge OEMs are unreasonably high and reflect the use of our monopoly power over CDMA and premium-tier LTE cellular modem chips rather than just the value of our patents. The court concluded that our unreasonably high royalties constitute an anticompetitive surcharge on cellular modem chips sold by our competitors, which increases the effective price of our competitors' cellular modem chips, reduces their margins and results in exclusivity. The court also found that our practice of not licensing competitors' cellular modem chips violated our commitments to certain standard-development organizations and a duty under the antitrust laws to license competing cellular modem chip makers and helped us maintain our royalties at unreasonably high levels. Finally, the court found that incentive funds entered into with certain OEMs further harmed competing cellular modem chip makers' ability to undermine our monopoly position, prevented rivals from entering the market and restricted the sales of those competitors that do enter. The court concluded that the combined effect of our conduct, together with our monopoly power, harmed the competitive process.

The court imposed the following injunctive relief: (1) we must not condition the supply of cellular modem chips on a customer's patent license status, and we must negotiate or renegotiate license terms with customers in good faith under conditions free from the threat of lack of access to or discriminatory provision of cellular modem chip supply or associated technical support or access to software; (2) we must make exhaustive cellular standard-essential patent licenses available to cellular modem chip suppliers on fair, reasonable and non-discriminatory (FRAND) terms and submit, as necessary, to arbitral or judicial dispute resolution to determine such terms; (3) we may not enter into express or de facto exclusive dealing agreements for the supply of cellular modem chips; and (4) we may not interfere with the ability of any customer to communicate with a government agency about a potential law enforcement or regulatory matter. The court also ordered us to submit to compliance and monitoring procedures for a period of seven years and to report to the FTC on an annual basis regarding our compliance with the above remedies.

We disagree with the court's conclusions, interpretation of the facts and application of the law. Accordingly, on May 28, 2019, we filed a Motion to Stay Pending Appeal in the court, which the court denied on July 3, 2019. On May 31, 2019, we filed with the court a Notice of Appeal to the United States Court of Appeals for the Ninth Circuit (Ninth Circuit). On July 8, 2019, we filed a Motion for Partial Stay of Injunction Pending Appeal and a Consent Motion to Expedite Appeal in the Ninth Circuit. On August 23, 2019, the Ninth Circuit granted our Motion. Thus, pending the resolution of the appeal in the Ninth Circuit or until further order of the Ninth Circuit, the portions of the court's injunction requiring that we must (i) make exhaustive cellular standard-essential patent licenses available to cellular modem chip suppliers and (ii) not condition the supply of cellular modem chips on a customer's patent license status and must negotiate or renegotiate license terms with customers are stayed. On July 10, 2019, the Ninth Circuit granted our Motion to Expedite Appeal, and we expect briefing to be completed before the end of the calendar year. We currently expect the Ninth Circuit to schedule oral argument for February 2020.

Contingent losses and other considerations: We will continue to vigorously defend ourself in the foregoing matters. However, litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Other than with respect to the EC fines, we have not recorded any accrual at September 29, 2019 for contingent losses associated with these matters based on our belief that losses, while possible, are not probable. Further, any possible range of loss cannot be reasonably estimated at this time. The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows. We are engaged in numerous other legal actions not described above arising in the ordinary course of our business and, while there can be no assurance, believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Indemnifications. We generally do not indemnify our customers and licensees for losses sustained from infringement of third-party intellectual property rights. However, we are contingently liable under certain product sales, services, license and other agreements to indemnify certain customers, chipset foundries and semiconductor assembly and test service providers against certain types of liability and/or damages arising from qualifying claims of patent, copyright, trademark or trade secret infringement by products or services sold or provided by us, or by intellectual property provided by us to chipset foundries and semiconductor assembly and test service providers. Our obligations under these agreements may be limited in terms of time and/or amount, and in some instances, we may have recourse against third parties for certain payments made by us.

Through September 29, 2019, we have received a number of claims from our direct and indirect customers and other third parties for indemnification under such agreements with respect to alleged infringement of third-party intellectual property rights by our products. Reimbursements under indemnification arrangements have not been material to our consolidated financial statements. We have not recorded any accrual for contingent liabilities at September 29, 2019 associated with these indemnification arrangements based on our belief that additional liabilities, while possible, are not probable. Further, any possible range of loss cannot be reasonably estimated at this time.

Purchase Obligations and Operating Leases. We have agreements with suppliers and other parties to purchase inventory, other goods and services and long-lived assets. Integrated circuit product inventory obligations represent purchase commitments for raw materials, semiconductor die, finished goods and manufacturing services, such as wafer bump, probe, assembly and final test. Under our manufacturing relationships with our foundry suppliers and assembly and test service providers, cancelation of outstanding purchase commitments is generally allowed but requires payment of costs incurred through the date of cancelation, and in some cases, incremental fees related to capacity underutilization. We lease certain of our land, facilities and equipment under noncancelable operating leases, with terms ranging from less than one year to 20 years and with provisions in certain leases for cost-of-living increases. Rental expense for fiscal 2019, 2018 and 2017 was $146 million, $160 million and $129 million, respectively.

Obligations under our purchase agreements, which primarily relate to integrated circuit product inventory obligations, and future minimum lease payments under our operating leases at September 29, 2019 were as follows (in millions):

	Purchase Obligations	Operating Leases
2020	$ 2,926	$ 138
2021	286	97
2022	108	66
2023	53	31
2024	16	18
Thereafter	1	35
Total	$ 3,390	$ 385

Other Commitments. At September 29, 2019, we have committed to fund certain strategic investments up to $154 million, most of which do not have fixed funding dates and are subject to certain conditions. Commitments represent the maximum amounts to be funded under these arrangements; actual funding may be in lesser amounts or not at all.

Note 8. Segment Information

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on CDMA, OFDMA and other technologies for use in mobile devices, wireless networks, devices used in the Internet of Things (IoT), broadband gateway equipment, consumer electronic devices and automotive telematics and infotainment systems. QTL grants licenses to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture, sale or use of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments and includes revenues and related costs associated with development contracts with an equity method investee. We also have nonreportable segments, including Qualcomm Government Technologies or QGOV (formerly Qualcomm Cyber Security Solutions) and other wireless technology and service initiatives.

We evaluate the performance of our segments based on earnings (loss) before income taxes (EBT). Segment EBT includes the allocation of certain corporate expenses to the segments, including depreciation and amortization expense related to unallocated corporate assets. Certain income and charges are not allocated to segments in our management reports because they are not considered in evaluating the segments' operating performance. Unallocated income and charges include certain interest expense; certain net investment income; certain share-based compensation; and certain research and development expenses, selling, general and administrative expenses and other expenses or income that were deemed to be not directly related to the businesses of the segments. Additionally, unallocated charges include recognition of the step-up of inventories and property, plant and equipment to fair value, amortization of certain intangible assets and certain other acquisition-related charges, third-party acquisition and integration services costs and certain other items, which may include major restructuring and restructuring-related costs, goodwill and long-lived asset impairment charges and litigation settlements and/or damages.

In fiscal 2018, all of the costs ($474 million) related to pre-commercial research and development of 5G (fifth generation) technologies were included in unallocated corporate research and development expenses, whereas similar costs related to the research and development of other technologies, including 3G (third generation) and 4G (fourth generation) technologies, were recorded in the QCT and QTL segments. Beginning in fiscal 2019, all research and development costs associated with 5G technologies were included in segment results. Additionally, beginning in fiscal 2019, certain research and development costs associated with early research and development that were historically included in our QCT segment were allocated to our QTL segment. The net effect of these changes negatively impacted QTL's EBT by $489 million in fiscal 2019 and positively impacted QCT's EBT by $160 million in fiscal 2019.

Beginning in fiscal 2019, we combined our Small Cells business, which sells products designed for the implementation of small cells to address the challenge of meeting the increased demand for mobile data, into our QCT segment. Revenues and operating results related to the Small Cells business were included in nonreportable segments through the end of fiscal 2018. Prior period segment information has not been adjusted to conform to the new segment presentation as such adjustments are insignificant.

The table below presents revenues, EBT and total assets for reportable segments (in millions):

	2019	2018	2017
Revenues			
QCT	$ 14,639	$ 17,282	$ 16,479
QTL	4,591	5,042	6,412
QSI	152	100	113
Reconciling items	4,891	187	(746)
Total	$ 24,273	$ 22,611	$ 22,258
EBT			
QCT	$ 2,143	$ 2,966	$ 2,747
QTL	2,954	3,404	5,142
QSI	344	24	65
Reconciling items	2,040	(6,002)	(4,967)
Total	$ 7,481	$ 392	$ 2,987
Assets			
QCT	$ 2,307	$ 3,041	$ 3,830
QTL	1,541	1,472	1,735
QSI	1,708	1,279	1,037
Reconciling items	27,401	26,926	58,896
Total	$ 32,957	$ 32,718	$ 65,498

Segment assets are comprised of accounts receivable and inventories for all reportable segments other than QSI. QSI segment assets include certain non-marketable equity instruments, accounts receivable and other investments. QSI assets at

September 29, 2019, September 30, 2018 and September 24, 2017 included $230 million, $283 million and $254 million, respectively, related to investments in equity method investees. Total segment assets differ from total assets on a consolidated basis as a result of unallocated corporate assets primarily comprised of certain cash, cash equivalents, marketable and non-marketable securities, property, plant and equipment, deferred tax assets, goodwill, intangible assets, noncurrent income taxes receivable and assets of nonreportable segments. The net book value of long-lived tangible assets located outside of the United States was $1.4 billion at September 29, 2019, September 30, 2018 and September 24, 2017. The net book values of long-lived tangible assets located in the United States were $1.7 billion, $1.6 billion and $1.8 billion at September 29, 2019, September 30, 2018 and September 24, 2017, respectively.

We report revenues from external customers by country based on the location to which our products or services are delivered, which for QCT is generally the country in which our customers manufacture their products, and for licensing revenues, the invoiced addresses of our licensees. As a result, the revenues by country presented herein are not necessarily indicative of either the country in which the devices containing our products and/or intellectual property are ultimately sold to consumers or the country in which the companies that sell the devices are headquartered. For example, China revenues could include revenues related to shipments of integrated circuits for a company that is headquartered in South Korea but that manufactures devices in China, which devices are then sold to consumers in Europe and/or the United States. Revenues by country were as follows (in millions):

	2019	2018	2017
China (including Hong Kong)	$ 11,610	$ 15,149	$ 14,579
Ireland	2,957	1	—
United States	2,774	603	513
South Korea	2,400	3,175	3,538
Other foreign	4,532	3,683	3,628
	$ 24,273	$ 22,611	$ 22,258

Reconciling items for revenues and EBT in a previous table were as follows (in millions):

	2019	2018	2017
Revenues			
Nonreportable segments	$ 168	$ 287	$ 311
Reduction to revenues related to BlackBerry arbitration decision	—	—	(962)
Other unallocated revenues	4,723	(100)	(95)
	$ 4,891	$ 187	$ (746)
EBT			
Reduction to revenues related to BlackBerry arbitration decision	$ —	$ —	$ (962)
Other unallocated revenues	4,723	(100)	(95)
Unallocated cost of revenues	(430)	(486)	(517)
Unallocated research and development expenses	(989)	(1,154)	(1,056)
Unallocated selling, general and administrative expenses	(413)	(576)	(647)
Unallocated other expenses (Note 2)	(414)	(3,135)	(1,742)
Unallocated interest expense	(619)	(761)	(488)
Unallocated investment and other income, net	243	566	913
Nonreportable segments	(61)	(356)	(373)
	$ 2,040	$ (6,002)	$ (4,967)

Certain revenues (and reduction to revenues) were not allocated to our segments in our management reports because they were not considered in evaluating segment results. Other unallocated revenues in fiscal 2019 were comprised of licensing revenues resulting from the settlement with Apple and its contract manufacturers. Other unallocated revenues in fiscal 2018 and 2017 were comprised of reductions to licensing revenues related to the portions of business arrangements that resolved legal disputes and were not allocated to our QTL segment. In fiscal 2017, we recognized a reduction to revenues related to an arbitration decision and resulting Joint Stipulation Regarding Final Award Agreement entered into with BlackBerry Limited, the substantial impact of which was not allocated to QTL.

Note 9. Acquisitions

On February 3, 2017 (the Closing Date), we completed the formation of a joint venture with TDK Corporation (TDK), under the name RF360 Holdings to enable delivery of radio frequency front-end (RFFE) modules and radio frequency (RF) filters into fully integrated products for mobile devices and Internet of Things (IoT) applications, among others. Upon formation, the joint venture was owned 51% by Qualcomm Global Trading Pte. Ltd. (Qualcomm Global Trading), a Singapore corporation and wholly-owned subsidiary of ours, and 49% by EPCOS AG (EPCOS), a German wholly-owned subsidiary of TDK. We had the option to acquire (and EPCOS had an option to sell) EPCOS's interest in the joint venture for $1.15 billion (Settlement Amount), beginning on August 4, 2019, for a period of 60 days (the Put and Call Option). The Put and Call Option was recorded as a liability at fair value as part of the total purchase price of $3.1 billion on the Closing Date. The liability was accreted to the Settlement Amount (with the offset recorded as interest expense) and was included in other current liabilities at September 30, 2018 (Note 2). On September 16, 2019, the Put and Call Option was exercised, and we acquired EPCOS's remaining minority ownership interest in RF360 Holdings for $1.15 billion.

At the Closing Date, we determined that RF360 Holdings was a variable interest entity, and its results of operations and statement of financial position have been included in our consolidated financial statements since its formation as the governance structure of RF360 Holdings provided us with the power to direct the activities of the joint venture that most significantly impacted its economic performance. Since the Put and Call Option was considered a financing of our purchase of EPCOS's interest in RF360 Holdings, noncontrolling interest was not recorded in our consolidated financial statements.

At the Closing Date, intangible assets acquired subject to amortization totaled $833 million, which primarily comprised of $738 million of technology-based intangible assets that are being amortized on a straight-line basis over the weighted-average useful lives of seven years.

The following table presents the unaudited pro forma results for fiscal 2017. The unaudited pro forma financial information combines the results of operations of Qualcomm and RF360 Holdings as though the companies had been combined as of the beginning of fiscal 2016. The pro forma information is presented for informational purposes only and is not indicative of the results of operations that would have been achieved if the acquisition had taken place at such time. The unaudited pro forma results presented below include adjustments for the step-up of inventories to fair value, amortization and depreciation of identified intangible assets and property, plant and equipment, adjustments for certain acquisition-related charges, interest expense related to the Put and Call Option and related tax effects (in millions):

	(Unaudited)
	2017
Pro forma revenues	$ 22,806
Pro forma net income attributable to Qualcomm	$ 2,614

Note 10. Cost Plan

In the second quarter of fiscal 2018, we announced a Cost Plan designed to align our cost structure to our long-term margin targets. As part of this plan, we initiated a series of targeted actions across our businesses with the objective to reduce annual costs by $1 billion, excluding incremental costs resulting from any future acquisition of a business. Actions taken under this plan have been completed and resulted in us achieving substantially all of this target in fiscal 2019 based on our run rate exiting the second quarter of fiscal 2019, excluding litigation costs that were in excess of the baseline spend.

Total restructuring and restructuring-related charges related to the Cost Plan were as follows (in millions):

	2019	2018 (1)	Total
Restructuring-related charges (2)	$ 151	$ 334	$ 485

Restructuring charges (3)	62	353	415
	$ 213	$ 687	$ 900

(1) During fiscal 2018, we recorded restructuring and restructuring-related charges of $629 million in other expenses and charges of $58 million in investment and other income, net.

(2) Restructuring-related charges primarily related to asset impairment charges in fiscal 2019 and 2018 and also included a $52 million net gain in fiscal 2019 from the sale of certain assets related to wireless electric vehicle charging applications and the sale of our mobile health nonreportable segment, as well as a $41 million gain in fiscal 2018 resulting from fair value adjustments of certain

contingent consideration related to a business combination.

(3) Restructuring charges primarily consisted of severance and consulting costs in fiscal 2019 and 2018, which were payable in cash.

The restructuring accrual, a portion of which was included in payroll and other benefits related liabilities with the remainder included in other current liabilities, is expected to be substantially paid within the next 12 months. At September 29, 2019 and September 30, 2018, the restructuring accrual was $17 million and $83 million, respectively.

Note 11. Fair Value Measurements

The following table presents our fair value hierarchy for assets and liabilities measured at fair value on a recurring basis at September 29, 2019 (in millions):

	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents	$ 6,493	$ 4,084	$ —	$ 10,577
Marketable securities:				
Corporate bonds and notes	—	4	—	4
Auction rate securities	—	—	35	35
Equity and preferred securities	418	—	—	418
Total marketable securities	418	4	35	457
Derivative instruments	—	25	—	25
Other investments	416	—	73	489
Total assets measured at fair value	$ 7,327	$ 4,113	$ 108	$ 11,548
Liabilities				
Derivative instruments	$ —	$ 1	$ —	$ 1
Other liabilities	416	—	35	451
Total liabilities measured at fair value	$ 416	$ 1	$ 35	$ 452

Activity within Level 3 of the Fair Value Hierarchy. Other investments and other liabilities included in Level 3 at September 29, 2019 and September 30, 2018 were comprised of convertible debt instruments issued by private companies and contingent consideration related to business combinations, respectively. Activity for marketable securities, other investments and other liabilities classified within Level 3 of the valuation hierarchy was insignificant during fiscal 2019, which was primarily related to issuances of convertible debt instruments by private companies and settlements of contingent consideration, and fiscal 2018, which was primarily related to settlements of convertible debt.

Nonrecurring Fair Value Measurements. We measure certain assets and liabilities at fair value on a nonrecurring basis. These assets and liabilities include equity method and non-marketable equity investments, assets acquired, and liabilities assumed in an acquisition or in a nonmonetary exchange, and property, plant and equipment and intangible assets that are written down to fair value when they are held for sale or determined to be impaired. During fiscal 2019 and 2018, certain property, plant and equipment, non-marketable equity securities, intangible assets and goodwill were written down to their estimated fair values (Note 10). We also measured certain non-marketable equity securities received as non-cash consideration at fair value on a nonrecurring basis (Note 2). We determined the fair values using cost, market and income approaches. The estimation of fair value used in the fair value measurements required the use of significant unobservable inputs, and as a result, the fair value measurements were classified as Level 3. We did not have any other significant assets or liabilities that were measured at fair value on a nonrecurring basis in periods subsequent to initial recognition for all periods presented.

Note 12. Revision of Prior Period Financial Statements

We revised certain prior period financial statements for an immaterial error related to the recognition of certain royalty revenues of our QTL segment (Note 1). A summary of revisions to our previously reported financial statements presented herein for comparative purposes is included below (in millions, except per share data).

Revised Consolidated Balance Sheets.

	As of September 30, 2018		
	As reported	Adjustment	As revised
Deferred tax assets (noncurrent)	$ 904	$ 32	$ 936
Total assets	32,686	32	32,718
Other current liabilities	6,825	153	6,978
Total current liabilities	11,236	153	11,389
Total liabilities	31,758	153	31,911
Retained earnings	663	(121)	542
Total stockholders' equity	928	(121)	807
Total liabilities and stockholders' equity	32,686	32	32,718

Revised Consolidated Statements of Operations.

	Year Ended					
	September 30, 2018			September 24, 2017		
	As reported	Adjustment	As revised	As reported	Adjustment	As revised
Licensing revenues	$ 5,332	$ (121)	$ 5,211	$ 5,644	$ (33)	$ 5,611
Total revenues	22,732	(121)	22,611	22,291	(33)	22,258
Operating income	742	(121)	621	2,614	(33)	2,581
Income before income taxes	513	(121)	392	3,020	(33)	2,987
Income tax expense	(5,377)	21	(5,356)	(555)	12	(543)
Net (loss) income	(4,864)	(100)	(4,964)	2,465	(21)	2,444
Net (loss) income attributable to Qualcomm	(4,864)	(100)	(4,964)	2,466	(21)	2,445
Basic (loss) earnings per share	(3.32)	(0.07)	(3.39)	1.67	(0.01)	1.66
Diluted (loss) earnings per share	(3.32)	(0.07)	(3.39)	1.65	(0.01)	1.64

Revised Consolidated Statements of Comprehensive Income (Loss).

	Year Ended					
	September 30, 2018			September 24, 2017		
	As reported	Adjustment	As revised	As reported	Adjustment	As revised
Net (loss) income	$ (4,864)	$ (100)	$ (4,964)	$ 2,465	$ (21)	$ 2,444
Total comprehensive (loss) income	(4,983)	(100)	(5,083)	2,421	(21)	2,400
Comprehensive (loss) income attributable to Qualcomm	(4,983)	(100)	(5,083)	2,422	(21)	2,401

Revised Consolidated Statements of Cash Flows.

We revised our consolidated statements of cash flows for the years ended September 30, 2018 and September 24, 2017 for this correction, which had no impact to net cash provided by operating activities in each such period.

	Year Ended September 30, 2018			
	As reported	Reclassification adjustment (1)	Revision adjustment	As revised
Operating Activities:				
Net loss	$ (4,864)	$ —	$ (100)	$ (4,964)
Income tax provision in excess of (less than) income tax payments	4,502	—	(21)	4,481
Other items, net	129	(178)	—	(49)
Other assets	30	(6)	—	24
Payroll, benefits and other liabilities	687	197	121	1,005
Net cash provided by operating activities	3,895	13	—	3,908

	Year Ended September 24, 2017			
	As reported	Reclassification adjustment (1)	Revision adjustment	As revised
Operating Activities:				
Net income	$ 2,465	$ —	$ (21)	$ 2,444
Income tax provision in excess of (less than) income tax payments	(400)	—	(12)	(412)
Other items, net	146	(172)	—	(26)
Other assets	169	(33)	—	136
Payroll, benefits and other liabilities	2,103	205	33	2,341
Net cash provided by operating activities	5,001	—	—	5,001

(1) Certain previously reported amounts have been reclassified to conform to the current year presentation.

Revised Segment Information.

QTL segment results were revised for this correction (Note 8), which resulted in a decrease in QTL revenues and EBT (earnings before income taxes) of $121 million and $33 million for fiscal 2018 and 2017, respectively.

Note 13. Summarized Quarterly Data (Unaudited)

The following financial information reflects all normal recurring adjustments that are, in the opinion of management, necessary for a fair statement of the results of the interim periods.

The table below presents quarterly data for fiscal 2019 and 2018 (in millions, except per share data):

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2019 (1)				
Revenues (2)	$ 4,842	$ 4,982	$ 9,635	$ 4,814
Operating income (2)	710	940	5,317	701
Net income (2)	1,068	663	2,149	506
Basic earnings per share (3):	$ 0.88	$ 0.55	$ 1.77	$ 0.42
Diluted earnings per share (3):	0.87	0.55	1.75	0.42
2018 (1) (4)				
Revenues	$ 6,035	$ 5,220	$ 5,577	$ 5,778
Operating (loss) income (5)	(4)	400	903	(679)
Net (loss) income (5)	(5,983)	330	1,202	(513)
Basic (loss) earnings per share (3):	$ (4.05)	$ 0.22	$ 0.81	$ (0.36)
Diluted (loss) earnings per share (3):	(4.05)	0.22	0.81	(0.36)

(1) Amounts, other than per share amounts, are rounded to millions each quarter. Therefore, the sum of the quarterly amounts may not equal the annual amounts reported.

(2) Revenues, operating income and net income in the third quarter of fiscal 2019 included licensing revenues recognized of $4.7 billion resulting from the settlement with Apple and its contract manufacturers. Operating income and net income in the third quarter of fiscal 2019 were impacted by a $275 million charge related to the 2019 EC Fine. Net income in the first quarter of fiscal 2019 was impacted by an income tax benefit of $570 million due to establishing new U.S. net deferred tax assets from making certain check-the-box elections. Net income in the third quarter of fiscal 2019 was impacted by a $2.5 billion charge to income tax expense resulting from the derecognition of a deferred tax asset related to the distributed intellectual property.

(3) Earnings (loss) per share and earnings per share attributable to Qualcomm are computed independently for each quarter and the full year based upon respective average shares outstanding. Therefore, the sum of the quarterly (loss) earnings per share amounts may not equal the annual amounts reported.

(4) As previously disclosed in our Quarterly Reports on Form 10-Q for the quarters ended December 30, 2018, March 31, 2019 and June 30, 2019, we revised certain prior period financial information for an immaterial error related to the recognition of certain royalty revenues of our QTL segment (Note 1).

(5) Operating loss and net loss in the fourth quarter of fiscal 2018 were impacted by a $2.0 billion charge related to the NXP termination fee. Net loss in the first quarter of fiscal 2018 was impacted by a $5.9 billion provisional charge to income tax expense due to the effects of the Tax Legislation. Additionally, operating income and net loss in the first quarter of fiscal 2018 were impacted by a $1.2 billion charge related to the 2018 EC fine.

SCHEDULE II
QUALCOMM Incorporated
VALUATION AND QUALIFYING ACCOUNTS
(In millions)

	Balance at Beginning of Period	Charged (Credited) to Costs and Expenses	Deductions	Balance at End of Period
Year ended September 29, 2019				
Allowance on trade receivables	$ 56	$ 3	$ (12)	$ 47
Valuation allowance on deferred tax assets	1,529	143	—	1,672
	$ 1,585	$ 146	$ (12)	$ 1,719
Year ended September 30, 2018				
Allowance on trade receivables	$ 11	$ 45	$ —	$ 56
Valuation allowance on deferred tax assets	863	666	—	1,529
	$ 874	$ 711	$ —	$ 1,585
Year ended September 24, 2017				
Allowance on trade receivables	$ 1	$ 10	$ —	$ 11
Valuation allowance on deferred tax assets	754	109	—	863
	$ 755	$ 119	$ —	$ 874

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark one)

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended September 30, 2018

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________ .

Commission File Number 0-19528

QUALCOMM Incorporated

(Exact name of registrant as specified in its charter)

Delaware	**95-3685934**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
5775 Morehouse Dr. **San Diego, California** **(Address of Principal Executive Offices)**	**92121-1714** **(Zip Code)**

(858) 587-1121
(Registrant's telephone number, including area code)

Securities registered pursuant to section 12(b) of the Act:

Title of Each Class	**Name of Each Exchange on Which Registered**
Common stock, $0.0001 par value	NASDAQ Stock Market

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer (Do not check if a smaller reporting company)	☐	Smaller reporting company	☐	Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant at March 25, 2018 (the last business day of the registrant's most recently completed second fiscal quarter) was $79,468,272,443, based upon the closing price of the registrant's common stock on that date as reported on the NASDAQ Global Select Market.

The number of shares outstanding of the registrant's common stock was 1,212,162,586 at November 5, 2018.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Definitive Proxy Statement in connection with the registrant's 2019 Annual Meeting of Stockholders, to be filed with the Commission subsequent to the date hereof pursuant to Regulation 14A, are incorporated by reference into Part III of this Report.

QUALCOMM INCORPORATED
Form 10-K
For the Fiscal Year Ended September 30, 2018
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TRADEMARKS

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In this document, the words “Qualcomm,” “we,” “our,” “ours” and “us” refer only to QUALCOMM Incorporated and its subsidiaries and not any other person or entity. This Annual Report (including, but not limited to, the section regarding Management’s Discussion and Analysis of Financial Condition and Results of Operations) contains forward-looking statements regarding our business, investments, financial condition, results of operations and prospects. Words such as “expects,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” “estimates” and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report. Additionally, statements concerning future matters such as the development of new products, enhancements or technologies, industry and market trends, sales levels, expense levels and other statements regarding matters that are not historical are forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report.

Although forward-looking statements in this Annual Report reflect our good faith judgment, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks and uncertainties and actual results and outcomes may differ materially from the results and outcomes discussed in or anticipated by the forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include without limitation those discussed under “Part I, Item 1A. Risk Factors” below, as well as those discussed elsewhere in this Annual Report. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report. Readers are urged to carefully review and consider the various disclosures made in this Annual Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

PART I

Item 1. Business

We incorporated in California in 1985 and reincorporated in Delaware in 1991. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. Our 52-week fiscal years consist of four equal fiscal quarters of 13 weeks each, and our 53-week fiscal years consist of three 13-week fiscal quarters and one 14-week fiscal quarter. The financial results for our 53-week fiscal years and our 14-week fiscal quarters will not be exactly comparable to our 52-week fiscal years and our 13-week fiscal quarters. The fiscal year ended September 30, 2018 included 53 weeks. The fiscal years ended September 24, 2017 and September 25, 2016 included 52 weeks.

Overview

We are a global leader in the development and commercialization of foundational technologies and products used in mobile devices and other wireless products, including network equipment, broadband gateway equipment and consumer electronic devices. Our inventions helped power the growth in smartphones, which have connected billions of people. We are a pioneer in 3G (third generation) and 4G (fourth generation) wireless technologies and are now a leader in 5G (fifth generation) wireless technologies to empower a new era of intelligent, connected devices. Our technologies and products are also used in industry segments and applications beyond mobile, including automotive, IoT (Internet of Things), networking, computing and AI (artificial intelligence), such as machine learning, allowing more devices to connect and communicate with each other in new ways. We derive revenues principally from sales of integrated circuit products and licensing our intellectual property, including patents, software and other rights.

The foundational technologies we invent help power the modern mobile experience, impacting how the world connects, computes and communicates. We share these inventions broadly through our licensing program, ensuring wide ecosystem access to technologies at the core of mobile innovation, and through the sale of our wireless chipset platforms and other products, which accelerates consumer adoption of experiences empowered by these inventions. As a company, we collaborate across the ecosystem, including manufacturers, operators, developers, governments and industry standards organizations, to create a global environment to drive continued progress and growth.

We have a long history of driving innovation. We played a leading role in developing the inventions that serve as the foundation for 3G and 4G wireless technologies, and which serve as the basis for 5G wireless technologies. This includes the CDMA (Code Division Multiple Access) and OFDMA (Orthogonal Frequency Division Multiple Access) families of technologies, with the latter encompassing LTE (Long Term Evolution), which, along with TDMA (Time Division Multiple Access), are the primary digital technologies currently used to transmit a wireless device user’s voice or data over radio waves using a public cellular wireless network. We own significant intellectual property, including patents, patent applications and trade secrets, applicable to products that implement any version of CDMA and OFDMA. Companies in the mobile communications industry generally recognize that any company seeking to develop, manufacture and/or sell subscriber units or infrastructure equipment that use CDMA-based and/or OFDMA-based technologies will require a license or other rights to use our patents.

We also develop and commercialize numerous other key technologies used in handsets and other wireless devices that contribute to end-user demand, and we own substantial intellectual property related to these technologies. Some of these inventions were contributed to and are being commercialized as industry standards, such as certain video and audio codecs, Wi-Fi, GPS (global positioning system) and Bluetooth. Other technologies widely used by wireless devices that we have developed are not related to any industry standards, such as operating systems, user interfaces, graphics and camera processing functionality, RF (radio frequency), RF front-end and antenna design and application processor architectures. Our patents cover a wide range of technologies across the entire wireless system (including wireless devices and infrastructure equipment) and not just what is embodied in chipsets.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits (also known as chips or chipsets) and system software based on CDMA, OFDMA and other technologies for use in mobile devices, wireless networks, devices used in IoT, broadband gateway equipment, consumer electronic devices and automotive telematics and infotainment systems. QTL grants licenses to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including our cyber security solutions (formerly Qualcomm Government Technologies or QGOV), mobile health, small cells and other wireless technology and service initiatives.

Industry Trends

The mobile industry has experienced tremendous growth for more than 20 years, growing from less than 60 million global connections in 1994 (WCIS+, October 2017) to approximately 7.9 billion global connections estimated as of September 30, 2018 (GSMA Intelligence, November 2018). As the largest technology platform in the world, mobile has changed the way we connect, compute and communicate with one another. The scale and pace of innovation in mobile, especially around connectivity and computing capabilities, is also impacting industries beyond wireless, empowering new services, new business models and new experiences. Our inventions and licensing program have been integral to, and provided foundational technologies for, the evolution of the mobile industry.

Extending connectivity. 3G/4G multimode mobile broadband technology has been a key growth driver of mobile, providing users with fast, reliable, always-on connectivity. Estimated as of September 30, 2018, there were approximately 5.5 billion 3G/4G connections globally (CDMA-based, OFDMA-based and CDMA/OFDMA multimode) representing nearly 69% of total mobile connections (GSMA Intelligence, November 2018). By 2022, global 3G/4G connections are projected to reach 7.2 billion, with approximately 87% of these connections coming from emerging regions (including China) (GSMA Intelligence, November 2018).

3G/4G multimode mobile broadband continues to be an important platform for extending the reach and potential of the Internet. In 2010, the number of broadband connections using mobile technology surpassed those using fixed technologies (GSMA Intelligence, November 2018), making mobile networks the primary method of accessing the Internet for many people around the world. This is further amplified in emerging regions, where, as of September 30, 2018, 3G/4G mobile broadband connections are estimated to be approximately seven times the number of fixed Internet household connections (GSMA Intelligence November 2018 and PT June 2018). In China, 3G/4G LTE multimode services have experienced strong adoption since being launched in the fourth quarter of calendar 2013, with more than 1.3 billion connections estimated as of September 30, 2018 (GSMA Intelligence, November 2018). In India, mobile operators continue to expand their 4G multimode services, providing consumers with the benefits of advanced mobile broadband connectivity while creating new opportunities for device manufacturers and other members of the mobile ecosystem. 3G/4G mobile broadband may be the first and, in many cases, the only way that people in these regions access the Internet.

Looking ahead, we expect to continue to be a leader in the next generation of wireless technology, known as 5G. Initial commercial deployments of 5G, which will focus on enhanced mobile broadband services, are expected to begin in calendar 2019. In June 2018, 3GPP (the 3rd Generation Partnership Project), an industry standards development organization, completed the first global specifications for 5G NR (New Radio) (Release 15). The 5G NR standard is expected to provide a unified connectivity network for all spectrum and service types based on OFDM (Orthogonal Frequency Division Multiplexing) technology, and it is designed to support faster data rates, lower network latency and wider bandwidths of spectrum. 5G NR is expected to enhance mobile broadband services, including ultra-high definition (4K) video streaming and augmented and virtual reality applications, with multi-gigabit speeds and to bring more capacity, which may enable operators to offer new unlimited mobile data plans.

Incorporating many of the innovations developed for 4G, future generations of 5G (3GPP Release 16 and beyond) are expected to expand 5G NR technologies to new industries beyond traditional cellular communications that will create new business models and new services, such as autonomous vehicles and artificial intelligence-based platforms designed to bring greater autonomy to manufacturing and other industrial applications (known as Industrial IoT), through ultra-reliable, ultra-low latency communication links; and connecting a significant number of "things" (also known as IoT, including the connected home, smart cities, wearables and voice and music devices), with connectivity designed to meet ultra-low power, complexity and cost requirements. We expect these future generations of 5G, which build on the various 3G and 4G features addressing IoT, will further contribute to the trend of enabling cellular connectivity to non-handset categories of devices. By 2025, global 5G connections are projected to reach 1.3 billion worldwide, representing approximately 15% of total cellular connections (GSMA Intelligence, November 2018).

Most 5G devices are expected to include multimode support for 3G, 4G and Wi-Fi, enabling service continuity where 5G has yet to be deployed and simultaneous connectivity across 4G technology, while also allowing mobile operators to utilize current network deployments. At the same time, 4G is expected to continue to evolve in parallel with the development of 5G and become fundamental to many of the key 5G technologies (through multi-connectivity), such as support for unlicensed spectrum, gigabit LTE user data rates and LTE IoT to meet the needs of ultra-low power, complexity and cost applications. The first phase of 5G networks is expected to support mobile broadband services for the smartphone form factor both in lower spectrum bands below 6 GHz as well as higher bands above 6 GHz, including millimeter wave (mmWave). We continue to work closely with mobile operators and infrastructure companies around the world on 5G NR demonstrations and trials in preparation for commercial network launches. We are also enabling 5G commercialization with our 5G modem family compliant with the 3GPP-based 5G NR global system. As with previous generations of mobile networks, it will take time to proliferate new 5G networks. We expect that 4G LTE will continue to grow and serve as the anchor of the 5G mobile experience (through multi-connectivity) for many years to come.

Growth in smartphones. Smartphone adoption continues to expand globally, fueled by fast 3G/4G LTE multimode connectivity, powerful mobile processors, advanced multimedia features and enhanced location awareness capabilities, among others. In 2017, approximately 1.5 billion smartphones shipped globally, which is consistent year-over-year, with cumulative smartphone shipments between 2018 and 2022 projected to reach approximately 7.8 billion (IDC Quarterly Mobile Phone Tracker, 2018Q2). Most of this growth is projected to happen in emerging regions (including China), where smartphones accounted for approximately 70% of total handset shipments in 2017 and are projected to reach approximately 84% in 2022 (IDC Quarterly Mobile Phone Tracker, 2018Q2). Growth in smartphones has not only been driven by the success of premium-tier devices but also by the number of affordable handsets that are available in emerging regions, as well as the variety of flexible and affordable data plans being offered by mobile operators.

Consumer demand for new types of experiences empowered by 3G/4G LTE connectivity, combined with the needs of mobile operators and device manufacturers to provide differentiated features and services, is driving continued innovation within the smartphone. As a result, the smartphone has become the go-to device for social networking, music, gaming, email and web browsing, among others. It is expected that 5G connectivity will drive further innovations within the smartphone and increase consumer demand by offering enhanced connectivity, which in turn will enable new applications. Given its advanced capabilities and utility, the smartphone is replacing many traditional consumer electronics devices, including digital cameras, video cameras, standalone GPS units and music players. We have been a leading contributor to this innovation across multiple technology dimensions, including connectivity, intelligence, camera, audio, video, sensors and security.

Transforming other industries. With their significant scale, rapid development cycles and highly integrated solutions, industries beyond mobile, including automotive, IoT and computing, among others, are leveraging the same technology innovations found in today's leading smartphones to enhance existing products and services as well as to create new products and services. Our inventions that contribute to the formation of advanced cellular technologies, such as 3G/4G and now 5G connectivity, are helping to drive this transformation. 5G is expected to further accelerate this transformation. For example, in the automotive industry, approximately 74% of new vehicles sold are projected to have cellular connectivity by 2025, representing an increase from 32% in 2017 (Strategy

Analytics, October 2018). In addition, the installed base of IoT devices is projected to grow more than 50% between 2018 and 2022 (ABI Research, August 2018).

The proliferation of intelligent, connected things is also enabling new types of user experiences, as smartphones are able to interact with and control more of the objects around us. Through the addition of embedded sensors and computer intelligence, connected things are able to collect and share data, providing users with contextually relevant information and further increasing the device's utility and value.

Wireless Technologies Overview

The growth in the use of wireless devices worldwide and the demand for data services and applications requires continuous innovation to further improve the user experience, support new services, increase network capacity, make use of different frequency bands and allow for dense network deployments. To meet these requirements, different wireless communications technologies continue to evolve. For nearly three decades, we have invested heavily in research and development to drive the evolution of wireless technologies, including CDMA and OFDMA. As a result, we have developed and acquired (and continue to develop and acquire) significant related intellectual property. This intellectual property has been incorporated into the most widely accepted and deployed cellular wireless communications technology standards, and we have licensed it to several hundred licensees, including leading wireless device and infrastructure manufacturers.

Cellular wireless technologies. Relevant cellular wireless technologies can be grouped into the following categories.

TDMA-based. TDMA (Time Division Multiple Access)-based technologies are characterized by their access method allowing several users to share the same frequency channel by dividing the signal into different time slots. Most of these systems are classified as 2G (second generation) technology. The main examples of TDMA-based technologies are GSM (deployed worldwide), IS-136 (deployed in the Americas) and Personal Digital Cellular (PDC) (deployed in Japan).

The transition of wireless devices from 2G to 3G/4G technologies continued around the world with estimated 3G/4G connections up 16% year-over-year (GSMA Intelligence, November 2018). Estimated as of September 30, 2018, there were approximately 2.4 billion GSM connections worldwide, representing approximately 30% of total cellular connections, down from 39% as of September 30, 2017 (GSMA Intelligence, November 2018).

CDMA-based. CDMA-based technologies are characterized by their access method allowing several users to share the same frequency and time by allocating different orthogonal codes to individual users. Most of the CDMA-based technologies are classified as 3G technology.

There are a number of variants of CDMA-based technologies deployed around the world, in particular CDMA2000, EV-DO (Evolution Data Optimized), WCDMA (Wideband CDMA) and TD-SCDMA (Time Division-Synchronous CDMA) (deployed exclusively in China). CDMA-based technologies provide vastly improved capacity for voice and low-rate data services as compared to analog technologies and significant improvements over TDMA-based technologies such as GSM. To date, these technologies have seen many revisions. New specifications continue to be defined by 3GPP.

CDMA technologies ushered in a significant increase in broadband data services that continue to grow globally. According to GSMA Intelligence estimates as of September 30, 2018, there were approximately 2.3 billion CDMA-based connections worldwide, representing approximately 29% of total cellular connections, down year-over-year as consumers migrate to OFDMA-based technologies.

OFDMA-based. OFDMA-based technologies are characterized by their access method allowing several users to share the same frequency band and time by allocating different subcarriers to individual users. Most of the OFDMA-based technologies to be deployed through 2018 are classified as 4G technology. 5G will heavily leverage OFDM-based technologies. We continue to play a significant role in the development of LTE, LTE Advanced and LTE Advanced Pro, which are the predominant 4G technologies currently in use.

LTE is incorporated in 3GPP specifications starting from Release 8 and uses OFDMA in the downlink and single carrier FDMA (SC-FDMA) in the uplink. LTE has two modes, FDD (frequency division duplex) and TDD (time division duplex), to support paired and unpaired spectrum, respectively, and continues to evolve as 3GPP defines new specifications. The principal benefit of LTE is its ability to leverage a wide range of spectrum (bandwidths of up to 20 MHz or more through aggregation). LTE is designed to seamlessly interwork with 3G through 3G/4G multimode devices. Most LTE devices rely on 3G for voice services across the network, as well as for ubiquitous data services outside the LTE coverage area, and on 4G for data services inside the LTE coverage area. LTE's voice solution, VoLTE (voice over LTE), is being commercially deployed in a growing number of networks.

LTE Advanced brings many more enhancements, including carrier aggregation, advanced antenna techniques and optimization for small cells. Apart from improving the performance of existing networks, these releases also bring new enhancements under the umbrella of LTE Advanced Pro to which we have been a significant contributor, including, LTE Direct for proximity-based device-to-device discovery, cellular vehicle-to-everything (C-V2X) communication, improved LTE broadcast, optimizations of narrowband communications designed for IoT (known as eMTC and NB-IoT) and the ability to use LTE Advanced in unlicensed spectrum (LTE Unlicensed) as well as in emerging shared spectrum bands in various regions (such as the Citizens Broadband Radio Service or CBRS in the United States). There will be multiple options for deploying LTE Unlicensed for different deployment scenarios.

- LTE-U, which relies on an LTE control carrier based on 3GPP Release 12, uses carrier aggregation to combine unlicensed and licensed spectrum in the downlink and has been introduced in early mobile operator deployments in the United States and evolves to Licensed Assisted Access (LAA).

- LAA, introduced as part of 3GPP Release 13, also aggregates unlicensed and licensed spectrum in both up and downlink and is being deployed globally by mobile operators. LAA is a key technology for many operators with limited licensed spectrum to deliver Gigabit LTE speeds.

There also have been ongoing efforts to make the interworking between LTE and Wi-Fi more seamless and completely transparent to the users. Further integration is achieved with LTE Wi-Fi Link Aggregation (LWA), which will utilize existing and new carrier Wi-Fi deployments.

According to GSMA Intelligence estimates as of September 30, 2018, there were approximately 3.2 billion global LTE connections worldwide, representing approximately 40% of total cellular connections.

According to the Global mobile Suppliers Association (GSA), as of October 2018, more than 865 wireless operators have commercially deployed or started testing LTE networks with 715 commercially launched in 208 countries, including 270 networks in 122 countries having commercially launched LTE Advanced networks featuring carrier aggregation (GSA, November 2018).

As we look forward, the wireless industry is actively developing and commercializing 5G technologies. Our inventions that serve as foundational technologies for 3G and 4G now also serve as foundational technologies for 5G. 5G is designed to transform the role of wireless technologies and incorporates advancements on 3G/4G features available today, including device-to-device capabilities and the use of all different types of spectrum (including licensed, unlicensed and shared spectrum). We continue to play a significant role in driving 5G from standardization to commercialization, including contributing to 3GPP standardization activities that are defining 5G NR and Next Generation Core (NGC) standards and their continued evolution.

5G NR is incorporated in 3GPP specifications starting from Release 15, which was completed in June 2018, and will be available in two architectural options: a non-standalone option where a data-only 5G NR link can be added to an existing 4G LTE deployment leveraging the existing 4G LTE core network; and a standalone option where 5G NR is deployed together with the 5G NGC network. The main advantages of 5G NR are its ability to target diverse services with very different technical requirements (from enhanced mobile broadband to massive IoT to mission critical services), its utilization of diverse types of spectrum (from the low bands to millimeter bands) and its ability to support diverse types of deployment scenarios. Predominant technological components of 5G NR include a scalable OFDM-based air interface with scalable OFDM numerology, a flexible slot-based framework with self-contained slot structure to address ultra-reliable, low-latency communication, new channel coding schemes to efficiently support large data blocks, multiple-input multiple-output (MIMO) and mobile millimeter wave to significantly increase the data rate offered to users. Like 3G and 4G LTE, 5G NR will support carrier aggregation across spectrum bands, across FDD and TDD, across licensed and unlicensed spectrum, but 5G NR will also support dual connectivity across LTE and 5G NR. A main benefit of 5G NR is its ability to take advantage of very wide channel bandwidth such as 800/400/100 MHz (to be compared with 4G LTE's 20 MHz maximum bandwidth which require carrier aggregation to combine spectrum beyond 20 MHz). As with previous cellular generations, 5G NR is designed to support seamless compatibility with 2G/3G/4G technologies through multimode devices.

Other (non-cellular) wireless technologies. There are other, non-cellular wireless technologies that have also been broadly adopted.

Wireless Local Area Networks. Wireless local area networks (WLAN), such as Wi-Fi, link two or more nearby devices wirelessly and usually provide connectivity through an access point. Wi-Fi systems are based on standards developed by the Institute of Electrical and Electronics Engineers (IEEE) in the 802.11 family of standards. 802.11ax, the latest standard, adds advanced features such as downlink and uplink OFDMA and uplink multiple-user MIMO to the 802.11 baseline standard. This technology primarily targets broadband connectivity for mobile devices, tablets, laptops and other consumer electronics devices using 2.4 GHz and 5 GHz spectrum. For 60GHz mmWave technology, 802.11ay adds wider channel bandwidth and the use of MIMO to the existing 802.11ad (also known as Gigabit Wi-Fi or WiGig) standard. 802.11ah was finalized in early 2017 and targets sub-1 GHz spectrum and is expected to be a solution for "connected home" applications that require long battery life. We played a leading role in the development of 802.11ac, 802.11ax, 802.11ay, 802.11ah, 802.11ad and 802.11p, and we are actively involved in innovative programs developed in the context of the Wi-Fi Alliance.

Bluetooth. Bluetooth is a wireless personal area network that provides wireless connectivity between devices over short distances ranging from a few centimeters to a few hundred meters. Bluetooth technology provides wireless connectivity to a wide range of fixed or mobile consumer electronics devices. Bluetooth functionalities are standardized by the Bluetooth Special Interest Group in various versions of the specification (from 1.0 to 5.0), which include different functionalities, such as enhanced data rate, low energy and mesh technologies. We are a leading contributor to Bluetooth technologies in the areas of mobile devices, HID (human interface device), A/V (audio/video) and mesh technologies.

Location Positioning Technologies. Location positioning technologies have evolved rapidly in the industry over the past few years in order to deliver an enhanced commercial location experience and comply with the new mandates on location for E911 calls from the United States Federal Communications Commission. We are a key developer of the Assisted-GPS (A-GPS), Assisted Global Navigation Satellite System (A-GNSS) and WLAN positioning technologies used in most cellular handsets today. For uses requiring the best reliability and accuracy for E911 services and navigational based services, A-GPS, A-GNSS and WLAN provide leading-edge solutions.

The industry continues to evolve to support additional inputs for improving the location experience. Our products and intellectual property now support multiple constellations for A-GNSS, including: GPS, GLONASS, Galileo and BeiDou; Wi-Fi-based and Bluetooth-based positioning for WLAN, including, Wi-Fi RSSI (received signal strength indication) and Wi-Fi RTT (round-trip time) signals for indoor location; observed time difference of arrival positioning for LTE access (e.g. in rural and indoor areas); and third-party inertial sensors. The combination of these different location solutions is used to ensure accurate location availability in all areas.

Other Significant Technologies used in Cellular and Certain Consumer Electronic Devices and Networks

We have played a leading role in developing and/or acquired many of the other technologies used across the wireless system, such as cellular and certain consumer electronic devices (and not just what is embodied in the chipsets) and networks, including:

- graphics and display processing functionality;
- video coding based on the HEVC (high efficiency video codec) standard, which is being deployed to support 4K video and immersive media content;
- audio coding, including EVS (enhanced voice services) and MPEG-H 3D Audio;
- the latest version of 3GPP's codec for multimedia use and for voice/speech use;
- multimedia transport, including MPEG-DASH (Dynamic Adaptive Streaming over HTTP) enabling advanced multimedia experiences;
- camera and camcorder functions;
- operating system and user interface features;
- machine learning platforms;
- augmented reality (AR) and virtual reality (VR) features enabling new types of user experiences;
- security and content protection systems for enhanced device security without compromising the user experience;
- volatile (LP-DDR2, 3, 4) and non-volatile (eMMC) memory and related controllers;
- power management systems for improved battery life and device charging; and
- RFFE (radio frequency front-end) system products for improved signal performance and reduced power consumption, while simplifying the design for manufacturers to develop LTE multimode, multiband devices.

Acquisitions

NXP Semiconductors N.V. On October 27, 2016, we announced a definitive agreement (as amended on February 20, 2018 and April 19, 2018, the Purchase Agreement) under which Qualcomm River Holdings, B.V. (Qualcomm River Holdings), an indirect, wholly owned subsidiary of QUALCOMM Incorporated, proposed to acquire NXP Semiconductors N.V. (NXP). Pursuant to the Purchase Agreement, Qualcomm River Holdings commenced a tender offer to acquire all of the issued and outstanding common shares of NXP. On July 26, 2018, we terminated the Purchase Agreement and paid NXP a termination fee of $2.0 billion in cash in accordance with the terms of the Purchase Agreement.

RF360 Holdings. On February 3, 2017, we completed the formation of a joint venture with TDK Corporation (TDK), under the name RF360 Holdings Singapore Pte. Ltd. (RF360 Holdings), to enable delivery of radio frequency front-end (RFFE) modules and radio frequency (RF) filters into fully integrated products for mobile devices and Internet of Things (IoT) applications, among others. The joint venture is owned 51% by Qualcomm Global Trading Pte. Ltd. (Qualcomm Global Trading), a Singapore corporation and wholly-owned subsidiary of ours, and 49% by EPCOS AG (EPCOS), a German wholly-owned subsidiary of TDK. Certain intellectual property, patents and filter and module design and manufacturing assets were carved out of existing TDK businesses and are owned by the joint venture, and certain assets were acquired directly by affiliates of ours. Qualcomm Global Trading has the option to acquire (and EPCOS has an option to sell)

EPCOS's interest in the joint venture for $1.15 billion in August 2019. The total purchase price was $3.1 billion. RF360 Holdings, which is included in our QCT segment, is a Singapore corporation with research and development and manufacturing and/or sales locations in the United States, Europe and Asia and its headquarters in Munich, Germany.

Operating Segments

We have three reportable segments. We conduct business primarily through QCT (Qualcomm CDMA Technologies) and QTL (Qualcomm Technology Licensing), while QSI (Qualcomm Strategic Initiatives) makes strategic investments. Revenues in fiscal 2018, 2017 and 2016 for our reportable segments were as follows (in millions, except percentage data):

	2018	2017	2016
QCT	$ 17,282	$ 16,479	$ 15,409
As a percent of total	76 %	74 %	65 %
QTL	$ 5,163	$ 6,445	$ 7,664
As a percent of total	23 %	29 %	33 %
QSI	$ 100	$ 113	$ 47
As a percent of total	—	1 %	—

QCT Segment. QCT is a leading developer and supplier of integrated circuits and system software based on CDMA, OFDMA and other technologies for use in wireless voice and data communications, networking, application processing, multimedia and global positioning system products. QCT's integrated circuit products are sold and its system software is licensed to manufacturers that use our products in mobile devices, tablets, laptops, data modules, handheld wireless computers and gaming devices, access points and routers, broadband gateway equipment, data cards and infrastructure equipment, other consumer electronics and automotive telematics and infotainment systems. Our Mobile Station Modem (MSM) integrated circuits, which include the Mobile Data Modem, Qualcomm® Single Chip and Qualcomm® Snapdragon™ mobile platforms and processors and LTE modems, perform the core baseband modem functionality in wireless devices providing voice and data communications, as well as multimedia applications and global positioning functions. In addition, our Snapdragon mobile platforms and processors provide advanced application, graphics and AI processing capabilities. Because of our experience in designing and developing CDMA- and OFDMA-based products, we design both the baseband integrated circuit and the supporting system, including the RF (Radio Frequency), PM (Power Management) and wireless connectivity (such as Wi-Fi and Bluetooth) integrated circuits. This approach enables us to optimize the performance of the wireless device with improved product features and integration with the network system. QCT's system software helps enable the other device components to interface with the integrated circuit products and is the foundation software enabling manufacturers to develop devices utilizing the functionality within the integrated circuits. We also provide support, including reference designs and tools, to assist our customers in reducing the time required to design their products and bring their products to market.

QCT offers a broad portfolio of products, including both wireless device and infrastructure integrated circuits, in support of CDMA- and OFDMA-based technologies. Our integrated circuit products are included in a broad range of devices, from low-tier, entry-level devices for emerging regions (including China), which may use our Qualcomm Reference Design (QRD) products, to premium-tier devices. In fiscal 2018, QCT shipped approximately 855 million MSM™ integrated circuits for wireless devices worldwide, compared to approximately 804 million and 842 million in fiscal 2017 and 2016, respectively.

Our modems are built to work with increasingly complex networks. They support the latest communication technologies and adapt to network conditions and user needs in real time to enable delivery of faster, smoother data and voice connections. Our 3G/4G modem roadmap delivers the latest network technologies across multiple product tiers and devices. This roadmap is the result of our years of research into emerging network standards and the development of chipsets that take advantage of these new standards, while maintaining backward compatibility with existing standards.

Each Snapdragon mobile platform and processor is a highly integrated, mobile optimized system on a chip incorporating our advanced technologies, including a Snapdragon modem for fast, reliable mobile broadband connectivity, a high performance central processing unit (CPU), digital signal processor (DSP), graphics processing unit (GPU), image signal processor, multimedia subsystems, including high fidelity audio, high-definition video and advanced imaging capabilities, our mobile security technology, and accurate location positioning engines. Our CPU cores are designed to deliver high levels of compute performance at low power, allowing manufacturers to design powerful, slim and power-efficient devices. Our Qualcomm® Adreno™ GPUs are also designed to deliver high quality graphics performance for visually rich 3D gaming and user interfaces. The heterogeneous compute architecture of our Snapdragon mobile platforms and processors is designed to help ensure that the CPU, DSP and GPU work efficiently together, each being utilized only when needed, which enhances the processing capacity, speed and efficiency of our Snapdragon mobile platforms and processors and the battery life of devices using our platforms and processors.

Our portfolio of RF products includes QFE (Qualcomm Front End) radio frequency front-end (RFFE) components that are designed to simplify the RF design for LTE multimode, multiband mobile devices, reduce power consumption and improve radio performance. Through our RF360 Holdings joint venture, QCT offers an expanded portfolio of RFFE products for mobile devices, infrastructure, automotive and IoT applications. Our technologies provide comprehensive RFFE product offerings with system level performance from the modem and transceiver to the antenna tuner that include power tracking, tuning systems, switching, multimode-multiband power amplification, low noise amplifiers, complex transmit and receive modules, in addition to discrete filtering applications across cellular, infrastructure and automotive markets.

Our wireless products also consist of integrated circuits and system software for Wi-Fi, Bluetooth, Bluetooth Smart, frequency modulation (FM) and near field communications (NFC), as well as technologies that support location data and services, including GPS, GLONASS, BeiDou and Galileo. Our Wi-Fi, Bluetooth and FM products have been integrated with the Snapdragon mobile platforms and processors to provide additional connectivity for mobile devices, tablets, laptops, consumer electronics and automotive telematics and infotainment systems. QCT also offers standalone Wi-Fi, Bluetooth, Bluetooth Smart, applications processor and Ethernet products for mobile devices, consumer electronics, computers, IoT applications, other connected devices and automotive telematics and infotainment systems. Our networking products include Wi-Fi, Ethernet and Powerline chips, network processors and software. These products help enable home and business networks to support the growing number of connected devices, digital media, data services and other smart home applications.

QCT primarily utilizes a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Integrated circuits are die cut from silicon wafers that have completed the package assembly and test manufacturing processes. The semiconductor package supports the electrical contacts that connect the integrated circuit to a circuit board. Die cut from silicon wafers are the essential components of all of our integrated circuits and a significant portion of the total integrated circuit cost. We employ both turnkey and two-stage manufacturing models to purchase our integrated circuits. Under the turnkey model, our foundry suppliers are responsible for delivering fully assembled and tested integrated circuits. Under the two-stage manufacturing model, we purchase die in singular or wafer form from semiconductor manufacturing foundries and contract with separate third-party suppliers for manufacturing services such as wafer bump, probe, assembly and the majority of our final test requirements. RF360 Holdings uses certain internal fabrication facilities to manufacture RFFE modules and RF filter acoustic products, and its manufacturing operations consist of front-end and back-end processes. The front-end processes primarily take place at manufacturing facilities located in Germany and Singapore and involve the imprinting of substrate silicon wafers with the circuitry required for semiconductors to function (also known as wafer fabrication). The back-end processes involve the assembly, packaging and test of semiconductors to prepare RFFE modules and RF filter acoustic products for distribution. The back-end manufacturing facilities are located in China, Germany and Singapore.

Other than RF360 Holdings, we primarily rely on independent third-party suppliers to perform the manufacturing and assembly, and most of the testing, of our integrated circuits based primarily on our proprietary designs and test programs. Our suppliers also are responsible for the procurement of most of the raw materials used in the production of our integrated circuits. The primary foundry suppliers for our various digital, analog/mixed-signal, RF and PM integrated circuits are Global Foundries Inc., Samsung Electronics Co. Ltd., Semiconductor Manufacturing International Corporation, Taiwan Semiconductor Manufacturing Company and United Microelectronics Corporation. The primary semiconductor assembly and test suppliers are Advanced Semiconductor Engineering, Amkor Technology, Siliconware Precision Industries and STATSChipPAC. The majority of our foundry and semiconductor assembly and test suppliers are located in the Asia-Pacific region.

QCT's sales are primarily made through standard purchase orders for delivery of products. QCT generally allows customers to reschedule delivery dates within a defined time frame and to cancel orders prior to shipment with or without payment of a penalty, depending on when the order is canceled. The industry in which QCT operates is intensely competitive. QCT competes worldwide with a number of U.S. and international designers and manufacturers of semiconductors. As a result of global expansion by foreign and domestic competitors, technological changes, lengthening replacement cycles for mobile devices, device manufacturer concentrations and the potential for further industry consolidation, we anticipate the industry to remain very competitive. We believe that the principal competitive factors for our products include performance, level of integration, quality, compliance with industry standards, price, time-to-market, system cost, design and engineering capabilities, new product innovation, growth and scaling of distribution channels and customer support. QCT also competes in both single- and multi-mode environments against alternative communications technologies including, but not limited to, GSM/GPRS/EDGE and TDMA. Additional competitive factors exist for QCT product offerings that have expanded into adjacent industry segments outside traditional cellular industries, including IoT and automotive, the latter of which is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in a significant barrier to entry and may result in increased costs.

QCT's current competitors include, but are not limited to, companies such as Broadcom Limited, Cirrus Logic, Cypress Semiconductor Corporation, HiSilicon Technologies, Intel, Marvell Technology, Maxim Integrated Products, MediaTek, Microchip Technology Inc., Murata Manufacturing Co., Ltd., Nordic Semiconductor, Nvidia, NXP Semiconductors N.V., Qorvo Inc., Realtek Semiconductor, Renesas Electronics Corporation, Samsung Electronics, Sequans Communications S.A., Skyworks Solutions Inc. and Spreadtrum Communications (which is controlled by Tsinghua Unigroup). QCT also faces competition from products internally developed by our customers, including some of our largest customers, and from some early-stage companies. Our competitors devote significant amounts of their financial, technical and other resources to develop and market competitive products and, in some cases, to develop and adopt competitive digital communication or signal processing technologies, and those efforts may materially and adversely affect us. Although we have attained a significant position in the industry, many of our current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to utilize their own internally-developed integrated circuit products, to use our competitors' integrated circuit products and/or sell such products to others, including by bundling with other products, or to choose alternative technologies; lower cost structures and/or a willingness and ability to accept lower prices and lower or negative margins for their products, particularly in China; foreign government support of other technologies or competitors; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and original equipment manufacturers in certain geographic regions (such as China) and/or experience in adjacent industry segments outside traditional cellular industries (such as automotive and IoT); and/or a more established presence in certain regions.

QTL Segment. QTL grants licenses or otherwise provides rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products, including, without limitation, products implementing CDMA2000, WCDMA, CDMA TDD, LTE and/or 5G standards and their derivatives. We have historically licensed our cellular standard-essential patents together with other Qualcomm patents that may be useful to such licensed products because licensees typically have desired to obtain the commercial benefits of receiving such broad patent rights from us. However, we offer licenses to only our cellular standard-essential patents (including 3G, 4G and 5G) for both single mode and multi-mode devices worldwide. A number of our licensees have entered into standard-essential patent only agreements on a worldwide basis, and we expect more of our licensees may enter into such standard-essential patent only agreements in the future. Our licensees manufacture wireless products including mobile devices (also known as subscriber units, which include handsets), other consumer devices (e.g., tablets and laptops), machine-to-machine devices (e.g., telematics devices, meter reading devices), plug-in end user data modem cards, certain embedded modules for incorporation into end user products, infrastructure equipment required to establish and operate a network and equipment to test networks and subscriber units.

Since our founding in 1985, we have focused heavily on technology development and innovation. These efforts have resulted in a leading intellectual property portfolio related to, among other things, wireless technology. We have an extensive portfolio of United States and foreign patents, and we continue to pursue patent applications around the world. Our patents have broad coverage in many countries, including Brazil, China, India, Japan, South Korea, Taiwan, the United States and countries in Europe and elsewhere. A substantial portion of our patents and patent applications relate to digital wireless communications technologies, including patents that are essential or may be important to the commercial implementation of CDMA2000, WCDMA (UMTS), TD-SCDMA, TD-CDMA (Time Division CDMA), OFDMA-based LTE and OFDMA-based 5G products. Our patent portfolio is the most widely and extensively licensed in the industry, with more than 300 licensees. Additionally, we have a substantial patent portfolio related to key technologies used in communications and other devices and/or related services, some of which were developed in industry standards development bodies. These include certain video codecs, audio codecs, Wi-Fi, memory interfaces, wireless power, GPS and positioning, broadcast and streaming protocols, and short-range communication functionalities, including NFC and Bluetooth. Our patents cover a wide range of technologies across the entire wireless system, including the device (handsets and other wireless devices) and not just what is embodied in the chipsets. Over the years, a number of companies have challenged our patent position, but companies in the mobile communications industry generally recognize that any company seeking to develop, manufacture and/or sell subscriber units or infrastructure equipment that use CDMA-based and/or OFDMA-based technologies will require a license or other rights to use our patents.

We have licensed or otherwise provided rights to use our patents to hundreds of companies on industry-accepted terms. Unlike some other companies in our industry that hold back certain key technologies, we offer companies substantially our entire patent portfolio for use in cellular subscriber devices and cell site infrastructure equipment. Our strategy to make our patented technologies broadly available has been a catalyst for industry growth, helping to enable a wide range of companies offering a broad array of wireless products and features while increasing the capabilities of and/or driving down average and low-end selling prices for 3G handsets and other wireless devices. By licensing or otherwise providing rights to use our patents to a wide range of equipment manufacturers, encouraging innovative applications, supporting equipment manufacturers with integrated chipset and software products and focusing on improving the efficiency of the airlink for wireless operators, we have helped 3G CDMA evolve and grow and reduced device pricing, all at a faster pace than the 2G (second generation) technologies such as GSM that preceded it.

Upon the initial deployment of OFDMA-based networks, the products implementing such technologies generally have been multimode and implement CDMA-based technologies. The licenses granted under our existing CDMA license agreements generally cover multimode CDMA/OFDMA (3G/4G) devices, and our licensees are obligated to pay royalties under their CDMA license agreements for such devices. Further, the majority of the leading handset and other wireless device companies (including Huawei, LG, Microsoft, Oppo, Samsung, Sony, vivo, Xiaomi and ZTE) have royalty-bearing licenses under our patent portfolio for use in LTE or other OFDMA-based products that do not implement any CDMA-based standards. As opportunities arise, we are expanding licenses granted under existing agreements to include 5G technologies through Release 15, both for multimode (i.e. 3G/4G/5G) devices as well as single mode 5G devices. In addition, new license agreements will include 5G technologies through Release 15 as a standard offering.

Standards bodies have been informed that we hold patents that might be essential for all 3G standards that are based on CDMA. We have committed to such standards bodies that we will offer to license our essential patents for these CDMA standards consistent with our commitments to those bodies. We have also informed standards bodies that we hold patents and pending patent applications that are potentially essential for LTE standards, including FDD and TDD versions and have committed to offer to license our essential patents for these LTE standards consistent with our commitments to those bodies. We have informed standards bodies that we hold patents and pending patent applications that are potentially essential for 5G technologies and have committed to offer to license our essential patents for these 5G standards consistent with our commitments to those bodies. We have made similar commitments with respect to certain other technologies implemented in industry standards.

QTL licensing revenues include license fees and royalties based on sales by licensees of products incorporating or using our intellectual property. License fees are fixed amounts paid in one or more installments. Royalties are generally based upon a percentage of the wholesale (i.e., licensee’s) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets and laptops, which effectively provide for a maximum royalty amount per device. Revenues generated from royalties are subject to quarterly and annual fluctuations. The vast majority of QTL revenues have been generated through our licensees’ sales of CDMA2000-based, WCDMA-based and LTE-based products (including 3G and 4G multi-mode devices), such as feature phones and smartphones. We have invested and continue to invest in both the acquisition and development of OFDMA technology and intellectual property and have generated the industry leading patent portfolio applicable to LTE, LTE Advanced and LTE Advanced Pro. Additionally, we have invested and continue to invest in the development of 5G which heavily leverages 3G and 4G technologies. Nevertheless, we face competition in the development of intellectual property for future generations of digital wireless communications technologies and services.

Separate and apart from licensing manufacturers of wireless devices and network equipment, we have entered into certain arrangements with competitors of our QCT segment, such as Broadcom Limited. A principal purpose of these arrangements is to provide our QCT segment and the counterparties certain freedom of operation with respect to each party’s integrated circuits business. In every case, these agreements expressly reserve the right for QTL to seek royalties from the customers of such integrated circuit suppliers with respect to such suppliers’ customers’ sales of CDMA-, WCDMA- and OFDMA-based wireless devices into which such suppliers’ integrated circuits are incorporated.

Our license agreements also may provide us with rights to use certain of our licensees’ technology and intellectual property to manufacture and sell certain components (e.g., Application-Specific Integrated Circuits) and related software, subscriber units and/or infrastructure equipment.

We are currently subject to various governmental investigations and private legal proceedings challenging our patent licensing practices, which may require us to change our patent licensing practices as described more fully in this Annual Report in “Part I, Item 1A. Risk Factors” under the heading “Changes in our patent licensing practices, whether due to governmental investigations, private legal proceedings challenging those practices or otherwise, could adversely impact our business and results of operations” and in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.”

QSI Segment. QSI makes strategic investments that are focused on opening new or expanding opportunities for our technologies and supporting the design and introduction of new products and services (or enhancing existing products or services) for voice and data communications and new industry segments. Many of these strategic investments are in early-stage companies in a variety of industries, including, but not limited to, automotive, IoT, mobile, data center and healthcare. Investments primarily include non-marketable equity instruments, which generally are recorded using the cost method or the equity method, and convertible debt instruments, which are recorded at fair value. In addition, QSI segment results include revenues and related costs associated with development contracts with one of our equity method investees. As part of our strategic investment activities, we intend to pursue various exit strategies for each of our QSI investments in the foreseeable future.

Other Businesses. Nonreportable segments include our cyber security solutions, mobile health, small cells and other wireless technology and service initiatives. Our nonreportable segments develop and sell products and services that include, but are not limited to: products and services for mobile health; license of chipset technology and products and services for use in data centers; products designed for implementation of small cells to address the challenge of meeting the increased demand for mobile data; development, other services and related products to U.S. government agencies and their contractors; and software products and content and push-to-talk enablement services to wireless operators.

Additional information regarding our operating segments is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information." Information regarding seasonality is provided in this Annual Report in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in the "Our Business and Operating Segments" section under the heading "Seasonality."

Restructuring Plans

In the second quarter of fiscal 2018, we announced a Cost Plan designed to align our cost structure to our long-term margin targets. As part of this plan, we have initiated and continue to execute on a series of targeted actions across our businesses to reduce annual costs by $1 billion, excluding incremental costs resulting from any future acquisition of a business. We expect these cost reductions to be fully captured in fiscal 2019.

In the fourth quarter of fiscal 2015, we announced a Strategic Realignment Plan designed to improve execution, enhance financial performance and drive profitable growth as we worked to create sustainable long-term value for stockholders. As part of this, among other actions, we implemented a cost reduction plan, which included a series of targeted reductions across our businesses, particularly in QCT, and a reduction to our annual share-based compensation grants. Restructuring activities were initiated in the fourth quarter of fiscal 2015, and the cost reduction initiatives were achieved by the end of fiscal 2016 and other activities under the plan were completed by the end of fiscal 2017.

Additional information regarding our Cost Plan and Strategic Realignment Plan is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 10. Restructuring Plans."

Corporate Structure

We operate our businesses through our parent company, QUALCOMM Incorporated, and multiple direct and indirect subsidiaries. We have developed our corporate structure in order to address various legal, regulatory, tax, contractual compliance, operations and other matters. Substantially all of our products and services businesses, including QCT, and substantially all of our engineering, research and development functions, are operated by QUALCOMM Technologies, Inc. (QTI), a wholly-owned subsidiary of QUALCOMM Incorporated, and QTI's subsidiaries. QTL is operated by QUALCOMM Incorporated, which owns the vast majority of our patent portfolio. Neither QTI nor any of its subsidiaries has any right, power or authority to grant any licenses or other rights under or to any patents owned by QUALCOMM Incorporated.

Revenue Concentrations and Significant Customers

Revenues in fiscal 2018 and 2017 were negatively impacted by our continued dispute with Apple Inc. and Hon Hai Precision Industry Co., Ltd./Foxconn, its affiliates and other suppliers to Apple. We did not record any revenues in fiscal 2018 or the third or fourth quarter of fiscal 2017 for royalties due on sales of Apple's products.

A small number of customers/licensees historically have accounted for a significant portion of our consolidated revenues. In fiscal 2018, revenues from Samsung Electronics, Xiaomi Corporation and suppliers to Apple Inc. each comprised more than 10% of consolidated revenues. Combined revenues from GuangDong OPPO Mobile Telecommunications Corp. Ltd. and vivo Communication Technology Co., Ltd., and their respective affiliates, also comprised more than 10% of consolidated revenues in fiscal 2018 and 2017. In fiscal 2017 and 2016, revenues from Samsung Electronics and suppliers to Apple Inc. each comprised more than 10% of consolidated revenues.

Research and Development

The communications industry is characterized by rapid technological change, evolving industry standards and frequent new product introductions, requiring a continuous effort to enhance existing products and technologies and to develop new products and technologies. We have significant engineering resources, including engineers with substantial expertise in CDMA, OFDMA and a broad range of other technologies. Using these engineering resources, we expect to continue to invest in research and development in a variety of ways in an effort to extend the demand for our products, and to leverage that research and development in adjacent industry segments outside of traditional cellular industries (such as automotive, IoT and networking), including continuing the development of CDMA, OFDMA and other technologies (such as RFFE), developing alternative technologies for certain specialized applications, participating in the formulation of new voice and data communication standards and technologies, and assisting in deploying digital voice and data communications networks around the world. Our research and development team has a demonstrated track record of innovation in voice and data communication technologies and application processor technology, among others.

We continue to invest significant resources towards advancements in 4G OFDMA-based technologies (including LTE) and 5G OFDMA-based technologies. We also engage in acquisitions and other transactions, such as joint ventures, to meet certain technology needs, to obtain development resources or open or expand opportunities for our technologies and to support the design and introduction of new products and services (or enhancing existing products and services) for voice and data communications and new industry segments outside of the traditional cellular industry. Our most recent significant transaction was our RF360 Holdings joint venture with TDK Corporation.

We make investments to provide our integrated circuit customers with chipsets designed on leading-edge technology nodes that combine multiple technologies for use in consumer devices (e.g., smartphones, tablets and laptops), consumer electronics and other products (e.g., access points and routers, data cards and infrastructure equipment). In addition to 3G and 4G LTE technologies, our chipsets support other wireless and wired connectivity technologies, including Wi-Fi, Bluetooth, Ethernet, GPS, GLONASS, BeiDou, Galileo and Powerline communication. Our integrated chipsets often include multiple technologies, including advanced multimode modems, application processors and graphics engines, as well as the tools to connect these diverse technologies. We continue to support Android, Windows and other mobile client software environments in our chipsets.

We develop on our own, and with our partners, innovations that are integrated into our product portfolio to further expand the opportunity for wireless communications and enhance the value of our products and services. These innovations are expected to enable our customers to improve the performance or value of their existing services, offer these services more affordably and introduce revenue-generating broadband data services ahead of their competition.

We have research and development centers in various locations throughout the world that support our global development activities and ongoing efforts to develop and/or advance 4G, 5G and a broad range of other technologies. We continue to use our substantial engineering resources and expertise to develop new technologies, applications and services and make them available to licensees to help grow the communications industry and generate new or expanded licensing opportunities.

We also make investments in opportunities that leverage our existing technical and business expertise to deploy new and expanded product areas, such as RFFE, and enter into adjacent industry segments, such as products for automotive, IoT (including the connected home, smart cities, wearables, voice and music and robotics), networking, computing and AI, such as machine learning, among others.

Sales and Marketing

Sales and marketing activities of our operating segments are discussed under Operating Segments. Other marketing activities include public relations, advertising, digital marketing and social media, participation in technical conferences and trade shows, development of business cases and white papers, competitive analyses, industry intelligence and other marketing programs, such as marketing development funds with our customers. Our Corporate Marketing department provides company information on our Internet site and through other channels regarding our products, strategies and technology to industry analysts and media.

Competition

Competition faced by our operating segments is discussed under Operating Segments. Competition in the communications industry throughout the world continues to increase at a rapid pace as consumers, businesses and governments realize the potential of wireless communications products and services. We have facilitated competition in the wireless communications industry by licensing our technologies to a large number of manufacturers. Although we have attained a significant position in the traditional cellular industry, many of our current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to utilize their own internally-developed integrated circuit products, to use our competitors' integrated circuit products and/or sell such products to others, including by bundling with other products, or to choose alternative technologies; lower cost structures and/or a willingness and ability to accept lower prices and lower or negative margins for their products, particularly in China; foreign government support of other technologies or competitors; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and original equipment manufacturers in certain geographic regions (such as China) and/or experience in adjacent industry segments outside traditional cellular industries (such as automotive and IoT); and/or a more established presence in certain regions. These relationships may affect customers' decisions to purchase products or license technology from us. Accordingly, new competitors or alliances among competitors could emerge and rapidly acquire significant market positions to our detriment.

We expect competition to increase as our current competitors expand their product offerings and introduce new technologies and services in the future and as additional companies compete with our products or services based on 3G, 4G, 5G or other technologies. Although we intend to continue to make substantial investments in developing new products and technologies and improving existing products and technologies, our competitors may introduce alternative products, services or technologies that threaten our business. It is also possible that the prices we charge for our products and services may continue to decline as competition continues to intensify. See also the Risk Factor entitled "*Our industry is subject to competition in an environment of rapid technological change that could result in decreased demand and/or declining average selling prices for our products and/or those of our customers and/or licensees.*"

Corporate Responsibility and Sustainability

We strive to better our local and global communities through ethical business practices, socially empowering technology applications, educational and environmental programs and employee diversity and volunteerism.

- *Our Governance.* We aim to demonstrate accountability, transparency, integrity and ethical business practices throughout our operations and interactions with our stakeholders.

- *Our Products.* We strive to meet or exceed industry standards for product responsibility and supplier management.

- *Our Workplace.* We endeavor to provide a safe and healthy work environment where diversity is embraced and various opportunities for training, growth and advancement are encouraged for all employees.

- *Our Community.* We have strategic relationships with a wide range of local organizations and programs that develop and strengthen communities worldwide.

- *Our Environment.* We aim to expand our operations while minimizing our carbon footprint, conserving water and reducing waste.

- *Qualcomm® Wireless Reach™.* We invest in strategic programs that foster entrepreneurship, aid in public safety, enhance delivery of health care, enrich teaching and learning and improve environmental sustainability through the use of advanced wireless technologies.

Employees

At September 30, 2018, we employed approximately 35,400 full-time, part-time and temporary employees, including employees from our RF360 Holdings consolidated joint venture. During fiscal 2018, the number of employees decreased by approximately 2,400 from 37,800 at September 24, 2017 primarily due to actions taken under our Cost Plan.

Available Information

Our Internet address is www.qualcomm.com. There we make available, free of charge, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). We also make available on our Internet site public financial information for which a report is not required to be filed with or furnished to the SEC. Our SEC reports and other financial information can be accessed through the investor relations section of our Internet site. The information found on our Internet site is not part of this or any other report we file with or furnish to the SEC.

Executive Officers

Our executive officers (and their ages at September 30, 2018) are as follows:

Steve Mollenkopf, age 49, has served as Chief Executive Officer since March 2014 and as a director since December 2013. He served as Chief Executive Officer-elect and President from December 2013 to March 2014 and as President and Chief Operating Officer from November 2011 to December 2013. In addition, he served as Executive Vice President and Group President from September 2010 to November 2011 and as Executive Vice President and President, QCT from August 2008 to September 2010. Mr. Mollenkopf joined Qualcomm in 1994 as an engineer and throughout his tenure at Qualcomm has held several other technical and leadership positions. Mr. Mollenkopf served as a member of the board of directors of General Electric Company from November 2016 to April 2018. Mr. Mollenkopf holds a B.S. degree in Electrical Engineering from Virginia Tech and an M.S. degree in Electrical Engineering from the University of Michigan.

Cristiano R. Amon, age 48, has served as President, Qualcomm Incorporated since January 2018. He served as Executive Vice President, Qualcomm Technologies, Inc. (QTI, a subsidiary of Qualcomm Incorporated) and President, Qualcomm CDMA Technologies (QCT) from November 2015 to January 2018. He served as Executive Vice President, QTI and Co-President, QCT from October 2012 to November 2015, Senior Vice President, Qualcomm Incorporated and Co-President, QCT from June 2012 to October 2012 and as Senior Vice President, QCT Product Management from October 2007 to June 2012. Mr. Amon joined Qualcomm in 1995 as an engineer and throughout his tenure at Qualcomm held several other technical and leadership positions. Mr. Amon holds a B.S. degree in Electrical Engineering from UNICAMP, the State University of Campinas, Brazil.

George S. Davis, age 60, has served as Executive Vice President and Chief Financial Officer since March 2013. Mr. Davis is responsible for leading Finance, Information Technology and Investor Relations. Prior to joining Qualcomm, Mr. Davis was Chief Financial Officer of Applied Materials, Inc., a provider of manufacturing equipment, services and software to the semiconductor, flat panel display, solar photovoltaic and related industries, from November 2006 to March 2013. Mr. Davis held several other leadership positions at Applied Materials from November 1999 to November 2006. Prior to joining Applied Materials, Mr. Davis served 19 years with Atlantic Richfield Company in a number of finance and other corporate positions. Mr. Davis holds a B.A. degree in Economics and Political Science from Claremont McKenna College and an M.B.A. degree from the University of California, Los Angeles.

Brian T. Modoff, age 59, has served as Executive Vice President, Strategy and Mergers & Acquisitions since October 2015. Prior to joining Qualcomm, Mr. Modoff was a Managing Director in Equity Research at Deutsche Bank Securities Inc. (Deutsche Bank), a provider of financial services, from March 1999 to October 2015. Prior to joining Deutsche Bank, Mr. Modoff was a research analyst at several financial institutions from November 1993 to March 1999. Mr. Modoff holds a B.A. degree in Economics from California State University, Fullerton and a Master of International Management from the Thunderbird School of Global Management.

Alexander H. Rogers, age 61, has served as Executive Vice President and President, QTL since October 2016. He served as Senior Vice President and President, QTL from September 2016 to October 2016, Senior Vice President, Deputy General Counsel and General Manager, QTL from March 2016 to September 2016, Senior Vice President and Deputy General Counsel from October 2015 to March 2016 and Senior Vice President and Legal Counsel from April 2007 to October 2015. Mr. Rogers joined Qualcomm in January 2001 as an attorney and throughout his tenure at Qualcomm held several other leadership positions in the legal department. Prior to joining Qualcomm, Mr. Rogers was a partner at the law firm of Gray, Cary, Ware & Friedenrich (now DLA Piper). Mr. Rogers holds B.A. and M.A. degrees in English Literature from Georgetown University and a J.D. degree from Georgetown University Law Center.

Donald J. Rosenberg, age 67, has served as Executive Vice President, General Counsel and Corporate Secretary since October 2007. He served as Senior Vice President, General Counsel and Corporate Secretary of Apple Inc. from December 2006 to October 2007. From May 1975 to November 2006, Mr. Rosenberg held numerous positions at IBM Corporation, including Senior Vice President and General Counsel. Mr. Rosenberg has served as a member of the board of directors of NuVasive, Inc. since February 2016 and is presently NuVasive's lead independent director. Mr. Rosenberg holds a B.S. degree in Mathematics from the State University of New York at Stony Brook and a J.D. degree from St. John's University School of Law.

Michelle Sterling, age 51, has served as Executive Vice President, Human Resources since May 2015. She served as Senior Vice President, Human Resources from October 2007 to May 2015. Ms. Sterling joined Qualcomm in 1994 and throughout her tenure at Qualcomm has held several other human resources and leadership positions. Ms. Sterling holds a B.S. degree in Business Management from the University of Redlands.

James H. Thompson, age 54, has served as Executive Vice President, Engineering, Qualcomm Technologies, Inc. and Chief Technology Officer since March 2017. He served as Executive Vice President, Engineering, Qualcomm Technologies, Inc. from October 2012 to March 2017 and as Senior Vice President, Engineering, Qualcomm Incorporated from July 1998 to October 2012. Dr. Thompson joined Qualcomm in 1992 as a senior engineer and throughout his tenure at Qualcomm held several other technical and leadership positions. Dr. Thompson holds B.S., M.S. and Ph.D. degrees in Electrical Engineering from the University of Wisconsin.

Item 1A. Risk Factors

You should consider each of the following factors in evaluating our business and our prospects. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also negatively impact our business and results of operations and require significant management time and attention. In that case, the trading price of our common stock could decline. You should also consider the other information set forth in this Annual Report in evaluating our business and our prospects, including but not limited to our financial statements and the related notes, and "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations."

Risks Related to Our Businesses

Our revenues depend on commercial network deployments, expansions and upgrades of CDMA, OFDMA and other communications technologies, including 5G; our customers' and licensees' sales of products and services based on these technologies; and customers' demand for our products and services.

We develop, patent and commercialize technology and products based on CDMA, OFDMA and other communications technologies, which are primarily wireless. We depend on operators of wireless networks and our customers and licensees to adopt and/or implement the latest generation of these technologies for use in their networks, devices and services. We also depend on our customers and licensees to develop devices and services based on these technologies with value-added features to drive consumer demand for new 3G/4G and 3G/4G/5G multi-mode devices, as well as 3G, 4G and 5G single-mode devices, as well as to establish the selling prices for such devices. Further, we depend on the timing of our customers' and licensees' deployments of new devices and services based on these technologies. Increasingly, we also depend on operators of wireless networks, our customers and licensees and other third parties to incorporate these technologies into new device types and into industries and applications beyond traditional cellular communications, such as automotive, IoT (including the connected home, smart cities, wearables, voice and music and robotics), networking, computing and artificial intelligence (AI), such as machine learning, among others.

We have historically been successful during wireless technology transitions. The next generation of wireless technologies is 5G, which we expect will empower a new era of connected devices and will be utilized not only in handsets but in new device types, industries and applications beyond traditional cellular communications, as described above (see also Part I, Item 1, "Business" for a further description of 5G). We expect initial commercial deployments of 5G devices to begin in calendar 2019. We believe it is important that we be a leader in 5G technology development, standardization, intellectual property creation and licensing, and develop, commercialize and be a leading supplier of 5G integrated circuit products and services in order to sustain and grow our business long-term.

Our revenues and/or growth in revenues could be negatively impacted, our business may be harmed and our substantial investments in these technologies may not provide us an adequate return, if:

- wireless operators and industries beyond traditional cellular communications deploy alternative technologies;
- wireless operators delay next-generation network deployments, particularly 5G, expansions or upgrades and/or delay moving 2G customers to 3G, 3G/4G multi-mode, 4G or 5G wireless devices;
- LTE, an OFDMA-based wireless technology, is not more widely deployed or further commercial deployment is delayed;
- government regulators delay making sufficient spectrum available for 3G, 4G and 5G wireless technologies, including unlicensed spectrum and shared spectrum technologies, thereby restricting the ability of wireless operators to deploy or expand the use of these technologies;

- wireless operators delay or do not drive improvements in 3G, 4G or 3G/4G multi-mode network performance and/or capacity;

- our customers' and licensees' revenues and sales of products, particularly premium-tier products, and services using these technologies, and average selling prices (ASPs) of such products, decline, do not grow or do not grow as anticipated due to, for example, the maturity of smartphone penetration in developed regions;

- our intellectual property and technical leadership included in the 5G standardization effort is different than in 3G and 4G standards;

- the standardization and/or deployment of 5G technologies is delayed;

- we are unable to drive the adoption of our products and services into networks and devices, including devices beyond traditional cellular applications, based on CDMA, OFDMA and other communications technologies; and/or

- consumers' rates of replacement of smartphones and other computing devices decline, do not grow or do not grow as quickly as anticipated.

Our industry is subject to competition in an environment of rapid technological change that could result in decreased demand and/or declining average selling prices for our products and/or those of our customers and/or licensees.

Our products, services and technologies face significant competition. We expect competition to increase as our current competitors expand their product offerings or reduce the prices of their products as part of a strategy to attract new business and/or customers, as new opportunities develop, and as new competitors enter the industry. Competition in wireless communications is affected by various factors that include, among others: device manufacturer concentrations; vertical integration; growth in demand, consumption and competition in certain geographic regions; government intervention and/or support of national industries and/or competitors; evolving industry standards and business models; evolving methods of transmission of voice and data communications; increasing data traffic and densification of wireless networks; convergence and aggregation of connectivity technologies (including Wi-Fi and LTE) in both devices and access points; consolidation of wireless technologies and infrastructure at the network edge; networking and connectivity trends (including cloud services); use of licensed, shared and unlicensed spectrum; the evolving nature of computing (including demand for always on, always connected capabilities); the speed of technological change (including the transition to smaller geometry process technologies); value-added features that drive selling prices as well as consumer demand for new 3G, 3G/4G multi-mode, 4G and 5G devices; turnkey, integrated products that incorporate hardware, software, user interface, applications and reference designs; scalability; and the ability of the system technology to meet customers' immediate and future network requirements. We anticipate that additional competitors will introduce products as a result of growth opportunities in wireless communications, the trend toward global expansion by foreign and domestic competitors, technological and public policy changes and relatively low barriers to entry in certain segments of the industry. Additionally, the semiconductor industry has experienced and may continue to experience consolidation, which could result in significant changes to the competitive landscape.

We expect that our future success will depend on, among other factors, our ability to:

- differentiate our integrated circuit products with innovative technologies across multiple products and features (e.g., modem, radio frequency front-end (RFFE), graphics and/or other processors, camera and connectivity) and with smaller geometry process technologies that drive performance;

- develop and offer integrated circuit products at competitive cost and price points to effectively cover both emerging and developed geographic regions and all device tiers;

- drive the adoption of our integrated circuit products into the most popular device models and across a broad spectrum of devices, such as smartphones, tablets, laptops and other computing devices, automobiles, wearables and voice and music and other connected devices and infrastructure products;

- maintain and/or accelerate demand for our integrated circuit products at the premium device tier, while increasing the adoption of our products in mid- and low-tier devices, in part by strengthening our integrated circuit product roadmap for, and developing channel relationships in, emerging regions, such as

China and India, and by providing turnkey products, which incorporate our integrated circuits, for low- and mid-tier smartphones, tablets and laptops;

- continue to be a leader in 4G and 5G technology evolution, including expansion of our LTE-based single-mode licensing program in areas where single-mode products are commercialized, and continue to innovate and introduce 4G and 5G turnkey, integrated products and services that differentiate us from our competition;

- be a leader serving original equipment manufacturers, high level operating systems (HLOS) providers, operators, cloud providers and other industry participants as competitors, new industry entrants and other factors continue to affect the industry landscape;

- be a preferred partner (and sustain preferred relationships) providing integrated circuit products that support multiple operating system and infrastructure platforms to industry participants that effectively commercialize new devices using these platforms;

- increase and/or accelerate demand for our semiconductor component products, including RFFE, and our wired and wireless connectivity products, including networking products for consumers, carriers and enterprise equipment and connected devices;

- identify potential acquisition targets that will grow or sustain our business or address strategic needs, reach agreement on terms acceptable to us, close the transactions and effectively integrate these new businesses and/or technologies;

- create standalone value and/or contribute to the success of our existing businesses through acquisitions, joint ventures and other transactions (and/or by developing customer, licensee, vendor, distributor and/or other channel relationships) in new industry segments and/or disruptive technologies, products and/or services (such as products for automotive, IoT (including the connected home, smart cities, wearables, voice and music and robotics), networking, computing and AI, such as machine learning, among others);

- become a leading supplier of RFFE products, which are designed to address cellular radio frequency band fragmentation while improving radio frequency performance and assist original equipment manufacturers in developing multiband, multi-mode mobile devices;

- be a leader in 5G technology development, standardization, intellectual property creation and licensing and develop, commercialize and be a leading supplier of 5G integrated circuit products and services; and/or

- continue to develop brand recognition to effectively compete against better known companies in computing and other consumer driven segments and to deepen our presence in significant emerging regions.

Competition in any or all product tiers may result in the loss of certain business or customers, which would negatively impact our revenues, results of operations and cash flows. Such competition may also reduce average selling prices for our chipset products and/or the products of our customers and licensees. Certain of these dynamics are particularly pronounced in emerging regions where competitors may have lower cost structures and/or may have a willingness and ability to accept lower prices and/or lower or negative margins on their products (particularly in China). Reductions in the average selling prices of our chipset products, without a corresponding increase in volumes, would negatively impact our revenues, and without corresponding decreases in average unit costs, would negatively impact our margins. In addition, reductions in the average selling prices of our licensees' products, unless offset by an increase in volumes, would generally decrease total royalties payable to us, negatively impacting our licensing revenues.

We compete with many different semiconductor companies, ranging from multinational companies with integrated research and development, manufacturing, sales and marketing organizations across a broad spectrum of product lines, to companies that are focused on a single application market segment or standard product, including those that produce products for automotive, IoT and networking applications. Most of these competitors compete with us with respect to some, but not all, of our businesses. Companies that promote standards that are neither CDMA- nor OFDMA-based (e.g., GSM) as well as companies that design integrated circuits based on CDMA, OFDMA, Wi-Fi or their derivatives are generally competitors or potential competitors. Examples (some of which are strategic partners of ours in other areas) include Advanced Micro Devices, Inc., Broadcom Limited, Cirrus Logic, Cypress Semiconductor Corporation, HiSilicon Technologies, Intel, Marvell Technology, Maxim Integrated Products, MediaTek, Microchip Technology Inc., Murata Manufacturing Co., Ltd., Nordic Semiconductor, Nvidia, NXP Semiconductors N.V., Qorvo Inc., Realtek Semiconductor, Renesas Electronics Corporation, Samsung Electronics, Sequans Communications S.A., Skyworks Solutions Inc. and Spreadtrum Communications (which is controlled by Tsinghua Unigroup). Some of these current and potential competitors may have advantages over us that include, among others: motivation by our customers in certain circumstances to utilize their own internally-developed integrated circuit products, to use our competitors' integrated circuit products and/or sell such products to others, including by bundling with other products, or to choose alternative technologies; lower cost structures and/or a willingness and ability to accept lower prices and lower or negative margins for their products, particularly in China;

foreign government support of other technologies or competitors; better known brand names; ownership and control of manufacturing facilities and greater expertise in manufacturing processes; more extensive relationships with local distribution companies and original equipment manufacturers in certain geographic regions (such as China) and/or experience in adjacent industry segments outside traditional cellular industries (such as automotive and IoT); and/or a more established presence in certain regions.

We derive a significant portion of our consolidated revenues from a small number of customers and licensees, which increasingly includes a small number of Chinese OEMs. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected.

Our QCT segment derives a significant portion of its revenues from a small number of customers, and we expect this trend to continue in the foreseeable future. Our industry is experiencing and may continue to experience concentration of device share among a few companies, particularly at the premium tier, contributing to this trend. Chinese OEMs continue to grow their device share in China and are increasing their device share in regions outside of China, and we derive a significant and increasing portion of our revenues from a small number of these OEMs.

In addition, certain of our largest integrated circuit customers develop their own integrated circuit products, which they have in the past chosen to utilize in certain of their devices, and may in the future choose to utilize in certain (or all) of their devices, rather than our products (and/or sell their integrated circuit products to third parties in competition with us). Also, Apple, which has historically been one of our largest customers, now utilizes products of one of our competitors in many of their devices rather than our products, is solely utilizing one or more or our competitor's products in its next smartphone launch, and may continue to use our competitors' products rather than our products in the future.

The loss of any one of our significant customers, a reduction in the purchases of our products by such customers or the cancelation of significant purchases by any of these customers, whether due to the use of their own integrated circuit products, our competitors' integrated circuit products or otherwise, would reduce our revenues and could harm our ability to achieve or sustain expected results of operations, and a delay of significant purchases, even if only temporary, would reduce our revenues in the period of the delay. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development. Further, the concentration of device share among a few companies, and the corresponding purchasing power of these companies, may result in lower prices for our products which, if not accompanied by a sufficient increase in the volume of purchases of our products, could have an adverse effect on our revenues and margins. In addition, the timing and size of purchases by our significant customers may be impacted by the timing of such customers' new or next generation product introductions, over which we have no control, and the timing and/or success of such introductions may cause our revenues and results of operations to fluctuate. Accordingly, if current industry dynamics and concentrations continue, our QCT segment's revenues will continue to depend largely upon, and be impacted by, future purchases, and the timing and size of any such future purchases, by these significant customers.

Further, Apple purchases our Mobile Data Modem (MDM) products, which do not include our integrated application processor technology, and which have lower revenue and margin contributions than our combined modem and application processor products. To the extent Apple takes device share from our other customers who purchase our integrated modem and application processor products, our revenues and margins may be negatively impacted.

Further, companies that develop HLOS for devices, including leading technology companies, now sell their own devices. If we fail to effectively partner or continue partnering with these companies, or with their partners or customers, they may decide not to purchase (either directly or through their contract manufacturers), or to reduce or discontinue their purchases of, our integrated circuit products.

In addition, there has been and continues to be litigation among certain of our customers and other industry participants, and the potential outcomes of such litigation, including but not limited to injunctions against devices that incorporate our products and/or intellectual property, or rulings on certain patent law or patent licensing issues that create new legal precedent, could impact our business, particularly if such action impacts one of our larger customers.

Although we have more than 300 licensees, our QTL segment derives a significant portion of its revenues from a limited number of licensees, which increasingly includes a small number of Chinese OEMs. In the event that one or more of our significant licensees fail to meet their reporting and/or payment obligations, or we are unable to renew or modify one or more of such license agreements, including standard-essential patent only license agreements, under similar terms, our revenues, results of operations and cash flows would be adversely impacted. Moreover, the future growth and success of our core licensing business will depend in part on the ability of our licensees to develop, introduce and deliver high-volume products that achieve and sustain customer acceptance. We have no control over the product development, sales efforts or pricing of products by our licensees, and our licensees might not be successful. Reductions in the average selling prices of wireless devices sold by our licensees, without a sufficient increase in the volumes of such devices sold, would generally have an adverse effect on our licensing revenues. Such adverse impact may be muted by the per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets and laptops.

We derive a significant portion of our consolidated revenues from the premium-tier device segment. If sales of premium-tier devices decrease, and/or sales of our premium-tier integrated circuit products decrease, our results of operations could be negatively affected.

We derive a significant portion of our revenues from the premium-tier device segment, and we expect this trend to continue in the foreseeable future. We have experienced, and expect to continue to experience, slowing growth in the premium-tier device segment due to, among other factors, lengthening replacement cycles in developed regions, where premium-tier smartphones are common; increasing consumer demand in emerging regions, particularly China and India, where premium-tier smartphones are less common and replacement cycles are on average longer than in developed regions and are continuing to lengthen; and/or a maturing premium-tier smartphone industry in which demand is increasingly driven by new product launches and/or innovation cycles.

In addition, as discussed in the prior risk factor, our industry is experiencing concentration of device share among a few companies at the premium tier, which gives them significant supply chain leverage. Further, those companies may utilize their own internally-developed integrated circuit products, or our competitors' integrated circuit products, rather than our products in all or a portion of their devices. These dynamics may result in lower prices for and/or reduced sales of our premium-tier integrated circuit products.

A reduction in sales of premium-tier devices, or a reduction in sales of our premium-tier integrated circuit products (which have a higher revenue and margin contribution than our lower-tier integrated circuit products), may reduce our revenues and margins and may harm our ability to achieve or sustain expected financial results. Any such reduction in revenues would also impact our cash resources available for other purposes, such as research and development.

Efforts by some communications equipment manufacturers or their customers to avoid paying fair and reasonable royalties for the use of our intellectual property may require the investment of substantial management time and financial resources and may result in legal decisions and/or actions by governments, courts, regulators or agencies, Standards Development Organizations (SDOs) or other industry organizations that harm our business.

From time to time, companies initiate various strategies to attempt to renegotiate, mitigate and/or eliminate their need to pay royalties to us for the use of our intellectual property. These strategies have included: (i) litigation, often alleging infringement of patents held by such companies, patent misuse, patent exhaustion, patent invalidity and/or unenforceability of our patents and/or licenses, that we do not license our patents on fair, reasonable and nondiscriminatory (FRAND) terms, or some form of unfair competition or competition law violation; (ii) taking positions contrary to our understanding of their contracts with us; (iii) appeals to governmental authorities; (iv) collective action, including working with wireless operators, standards bodies, other like-minded companies and other organizations, on both formal and informal bases, to adopt intellectual property policies and practices that could have the effect of limiting returns on intellectual property innovations; (v) lobbying governmental regulators and elected officials for the purpose of seeking the reduction of royalty rates or the base on which royalties are calculated, of seeking to impose some form of compulsory licensing and/or of weakening a patent holder's ability to enforce its rights or obtain a fair return for such rights; and (vi) licensees using various strategies to attempt to shift their royalty obligation to their suppliers that results in lowering the wholesale (i.e., licensee's) selling price on which the royalty is calculated.

In addition, certain licensees have disputed, underreported, underpaid, not reported and/or not paid royalties owed to us under their license agreements or reported to us in a manner that is not in compliance with their contractual obligations, and certain companies have yet to enter into or have delayed entering into or renewing license agreements with us for their use of our intellectual property, and licensees and/or companies may continue to do so in the future. The fact that one or more licensees dispute, underreport, underpay, do not report and/or do not pay royalties owed to us may encourage other licensees to take similar actions and may encourage other licensees or unlicensed companies to delay entering into, or not enter into, new license agreements. Further, to the extent such licensees and/or companies increase their device share, the negative impact of their underreporting, underpayment, non-payment and/or non-reporting on our business, revenues, results of operations, financial condition and/or cash flows will be exacerbated.

We are currently subject to various litigation and governmental investigations and/or proceedings, some of which have arisen and may continue to arise out of the strategies described above. Certain legal matters are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, revenues, results of operations, financial condition and/or cash flows. Depending on the type of matter, various remedies that could result from an unfavorable resolution include, among others, injunctions, monetary damages or fines or other orders to pay money, the issuance of orders to cease certain conduct and/or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers and/or modify or renegotiate our existing license agreements, and/or determinations that all or portions of our license agreements are invalid or unenforceable. In addition, decisions or orders arising out of governmental investigations or proceedings could require us to renegotiate, or could encourage or embolden our licensees to demand to renegotiate, their license agreements with us (which could be on terms that are less favorable to us than existing terms), and such licensees may underreport, underpay, not report or not pay royalties owed to us pending the conclusion of such negotiations. Further, a governmental body in a particular country or region may assert, and may be successful in imposing, remedies with effects that extend beyond the borders of that country or region. See also the Risk Factor entitled "Changes in our patent licensing practices, whether due to governmental investigations, private legal proceedings challenging those practices or otherwise, could adversely impact our business and results of operations."

In addition, in connection with our participation in SDOs, we, like other patent owners, generally have made contractual commitments to such organizations to license those of our patents that would necessarily be infringed by standard-compliant products as set forth in those commitments. Some manufacturers and users of standard-compliant products advance interpretations of these commitments that are adverse to our licensing business, including interpretations that would limit the amount of royalties that we could collect on the licensing of our patent portfolio.

Further, some companies or entities have proposed significant changes to existing intellectual property policies for implementation by SDOs and other industry organizations with the goal of significantly devaluing standard-essential patents. For example, some have put forth proposals which would require a maximum aggregate intellectual property royalty rate for the use of all standard-essential patents owned by all of the member companies to be applied to the selling price of any product implementing the relevant standard. They have further proposed that such maximum aggregate royalty rate be apportioned to each member company with standard-essential patents based upon the number of standard-essential patents held by such company. Others have proposed that injunctions not be an available remedy for infringement of standard-essential patents and/or have made proposals that could severely limit damage awards and other remedies by courts for patent infringement (e.g., by severely limiting the base upon which the royalty percentage may be applied). A number of these strategies are purportedly based on interpretations of the policies of certain SDOs concerning the licensing of patents that are or may be essential to industry standards and on our (and/or other companies') alleged failure to abide by these policies.

Some SDOs, courts and governmental agencies have adopted and may in the future adopt some or all of these interpretations or proposals in a manner adverse to our interests, including in litigation to which we may not be a party.

We expect that such proposals, interpretations and strategies will continue in the future, and if successful, our business model would be harmed, either by limiting or eliminating our ability to collect royalties (or by reducing the royalties we can collect) on all or a portion of our patent portfolio, limiting our return on investment with respect to new technologies, limiting our ability to seek injunctions against infringers of our standard-essential patents, constraining our ability to make licensing commitments when submitting our technology for inclusion in future standards (which could make our technology less likely to be included in such standards) or forcing us to work outside of SDOs or other industry groups to promote our new technologies, and our revenues, results of operations and/or cash flows could be negatively impacted. In addition, the legal and other costs associated with asserting or defending our positions have been and continue to be significant. We assume that such challenges, regardless of their merits, will continue into the foreseeable future and will require the investment of substantial management time and financial resources.

Our business, particularly our licensing business, may suffer as a result of adverse rulings in government investigations or proceedings.

We are currently subject to various governmental investigations and/or proceedings, particularly with respect to our licensing business, and certain such matters are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." Key allegations in those matters include, among others, that we do not license our cellular standard-essential patents separately from our other patents, that we violate FRAND licensing commitments by refusing to grant licenses to chipset makers, that our royalty rates are too high and/or that the base on which our royalties are calculated should be something less than the wholesale (i.e., licensee's) selling price of the applicable device (minus certain permitted deductions). The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition and/or cash flows. Depending on the type of matter, various remedies that could result from an unfavorable resolution include, among others, injunctions, monetary damages or fines or other orders to pay money, and/or the issuance of orders to cease certain conduct and/or modify our business practices, such as requiring us to reduce our royalty rates, reduce the base on which our royalties are calculated, grant patent licenses to chipset manufacturers and/or modify or renegotiate our existing license agreements, and/or determinations that all or portions of our license agreements are invalid or unenforceable. In addition, decisions or orders arising out of such governmental investigations or proceedings could require us to renegotiate, or could encourage or embolden our licensees to demand to renegotiate, their license agreements with us (which could be on terms that are less favorable to us than existing terms), and such licensees may underreport, underpay, not report or not pay royalties owed to us pending the conclusion of such negotiations. Further, a governmental body in a particular country or region may assert, and may be successful in imposing, remedies with effects that extend beyond the borders of that country or region. See also the Risk Factor entitled

“Changes in our patent licensing practices, whether due to governmental investigations, private legal proceedings challenging those practices or otherwise, could adversely impact our business and results of operations.”

Changes in our patent licensing practices, whether due to governmental investigations, private legal proceedings challenging those practices or otherwise, could adversely impact our business and results of operations.

We are currently subject to various governmental investigations and private legal proceedings challenging our patent licensing practices as described more fully in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.” Key allegations in those matters include, among others, that we do not license our cellular standard-essential patents separately from our other patents, that we violate FRAND licensing commitments by refusing to grant licenses to chipset makers, that our royalty rates are too high and/or that the base on which our royalties are calculated should be something less than the wholesale (i.e., licensee’s) selling price of the applicable device (minus certain permitted deductions). We believe that the ultimate intent of these investigations and legal proceedings is to reduce the amount of royalties that licensees are required to pay to us for their use of our intellectual property.

We have historically licensed our cellular standard-essential patents together with our other patents that may be useful to licensed products because licensees typically have desired to obtain the commercial benefits of receiving such broad patent rights from us. However, we also have licensed only our cellular standard-essential patents to certain licensees who have requested such licenses. In addition, in connection with our resolution with the China National Development and Reform Commission (NDRC), our standard practice in China since 2015 is to offer licenses to our 3G and 4G standard-essential Chinese patents for devices sold for use in China separately from our other patents.

In addition, we offer licenses to only our cellular standard-essential patents (including 3G, 4G and 5G) for both single mode and multi-mode devices worldwide. A number of our licensees have entered into standard-essential patent only agreements on a worldwide basis, and we expect more of our licensees may do so in the future. Our royalty rates for licenses to only our cellular standard-essential patents are lower than our royalty rates for licenses to substantially all of our patent portfolio. If more licensees choose a license to only our cellular standard-essential patents instead of a portfolio license than has historically been the case, our licensing revenues and earnings would be negatively impacted unless we were able to license our other patents at rates that offset all or a portion of any difference between the royalties previously received for licenses of substantially all of our patent portfolio as compared to licenses of only our cellular standard-essential patents and/or there was a sufficient increase in the overall volume of sales of devices upon which royalties are paid.

If we were required to grant patent licenses to chipset manufacturers (i.e., to implement a more complex, tiered licensing structure in which we license certain portions of our patent portfolio to chipset manufacturers and other portions to device manufacturers), we would incur additional transaction costs, which may be significant, and we could incur delays in recognizing revenues until license negotiations were completed. In addition, our licensing revenues and earnings would be negatively impacted if we were not able to obtain, in the aggregate, equivalent revenues under such a multi-level licensing structure.

If we were required to reduce the royalty rates we charge under our patent license agreements, our revenues, earnings and/or cash flows would be negatively impacted absent a sufficient increase in the volume of sales of devices upon which royalties are paid. Similarly, if we were required to reduce the base on which our royalties are calculated, our revenues, results of operations and/or cash flows would be negatively impacted unless there was a sufficient increase in the volume of sales of devices upon which royalties are paid and/or we were able to increase our royalty rates to offset the decrease in revenues resulting from such lower royalty base (assuming the absolute royalty dollars were below any relevant royalty caps).

To the extent that we were required to implement any of these new licensing practices by modifying or renegotiating our existing license agreements, we would incur additional transaction costs, which may be significant, and we could incur delays in recognizing revenues until license negotiations were completed. The impact of any such changes to our licensing practices could vary widely and by jurisdiction, depending on the specific outcomes and the geographic scope of such outcomes. In addition, if we were required to make modifications to our licensing practices in one jurisdiction, licensees and/or governmental agencies in other jurisdictions may attempt to obtain similar outcomes for themselves and/or for such other jurisdictions, as applicable.

The enforcement and protection of our intellectual property rights may be expensive, could fail to prevent misappropriation or unauthorized use of our intellectual property rights, could result in the loss of our ability to enforce one or more patents, and/or could be adversely affected by changes in patent laws, by laws in certain foreign jurisdictions that may not effectively protect our intellectual property rights and/or by ineffective enforcement of laws in such jurisdictions.

We rely primarily on patent, copyright, trademark and trade secret laws, as well as nondisclosure and confidentiality agreements, international treaties and other methods, to protect our proprietary information, technologies and processes, including our patent portfolio. Policing unauthorized use of our products, technologies and proprietary information is difficult and time consuming. The steps we have taken have not always prevented, and we cannot be certain the steps we will take in the future will prevent, the misappropriation or unauthorized use of our proprietary information and technologies, particularly in foreign countries where the laws may not protect our proprietary intellectual property rights as fully or as readily as U.S. laws or where the enforcement of such laws may be lacking or ineffective. Some industry participants who have a vested interest in devaluing patents in general, or standard-essential patents in particular, have mounted attacks on certain patent systems, increasing the likelihood of changes to established patent laws. In the United States, there is continued discussion regarding potential patent law changes and current and potential future litigation regarding patents, the outcomes of which could be detrimental to our licensing business. The laws in certain foreign countries in which our products are or may be manufactured or sold, including certain countries in Asia, may not protect our intellectual property rights to the same extent as the laws in the United States. We expect that the European Union will adopt a unitary patent system in the next few years that may broadly impact that region's patent regime. We cannot predict with certainty the long-term effects of any potential changes. In addition, we cannot be certain that the laws and policies of any country or the practices of any standards bodies, foreign or domestic, with respect to intellectual property enforcement or licensing or the adoption of standards, will not be changed in the future in a way detrimental to our licensing program or to the sale or use of our products or technologies.

We have had, and may in the future have, difficulty in certain circumstances in protecting or enforcing our intellectual property rights and/or contracts, including collecting royalties for use of our patent portfolio due to, among others: refusal by certain licensees to report and/or pay all or a portion of the royalties they owe to us; policies of foreign governments; challenges to our licensing practices under competition laws; adoption of mandatory licensing provisions by foreign jurisdictions (either with controlled/regulated royalties or royalty free); failure of foreign courts to recognize and enforce judgments of contract breach and damages issued by courts in the United States; and/or challenges before competition agencies to our licensing business and/or the pricing and integration of additional features and functionality into our chipset products. Certain licensees have disputed, underreported, underpaid, not reported and/or not paid royalties owed to us under their license agreements with us or reported to us in a manner that is not in compliance with their contractual obligations, and certain companies have yet to enter into or have delayed entering into or renewing license agreements for their use of our intellectual property, and such licensees and/or companies may continue to do so in the future. The fact that one or more licensees dispute, underreport, underpay, do not report and/or do not pay royalties owed to us may encourage other licensees to take similar actions and may encourage other licensees or unlicensed companies to delay entering into, or not enter into, new license agreements. Additionally, although our license agreements provide us with the right to audit the books and records of licensees, audits can be expensive, time consuming, incomplete and subject to dispute. Further, certain licensees may not comply with the obligation to provide full access to their books and records. To the extent we do not aggressively enforce our rights under our license agreements, licensees may not comply with their existing license agreements, and to the extent we do not aggressively pursue unlicensed companies to enter into license agreements with us for their use of our intellectual property, other unlicensed companies may not enter into license agreements. Similarly, we provide access to certain of our intellectual property and/or proprietary and/or confidential business information to our direct and indirect customers and licensees, who may wrongfully use such intellectual property and/or information and/or wrongfully disclose such intellectual property and/or information to third parties, including our competitors.

We have entered into litigation and/or arbitration in the past and may need to further litigate and/or arbitrate in the future to enforce our contract and/or intellectual property rights, protect our trade secrets or determine the validity and scope of proprietary rights of others. We are currently engaged in litigation matters related to protecting or enforcing our contract and/or intellectual property rights, and certain such matters are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." As a result of any such litigation and/or arbitration, we could lose our ability to enforce one or more patents, portions of our license agreements could be determined to be invalid or unenforceable (which may in turn result in other licensees either not complying with their existing license agreements and/or initiating litigation) and/or we could incur substantial costs. Any action we take to enforce our contract or intellectual property rights could be costly and could absorb significant management time and attention, which, in turn, could negatively impact our results of operations and/or cash flows. Further, even a positive resolution to our enforcement efforts may take time to conclude, which may reduce our revenues and cash resources available for other purposes, such as research and development, in the periods prior to conclusion. See also the Risk Factor entitled "Changes in our patent licensing practices, whether due to governmental investigations, private legal proceedings challenging those practices or otherwise, could adversely impact our business and results of operations."

Our growth increasingly depends on our ability to extend our technologies, products and services into new and expanded product areas, such as RFFE, and adjacent industry segments and/or applications outside of traditional cellular

industries, such as automotive, IoT and networking, among others. Our research, development and other investments in these new and expanded product areas and industry segments, and related technologies, products and services, as well as in our existing technologies, products and services and new technologies, such as 5G, may not generate operating income or contribute to future results of operations that meet our expectations.

Our industry is subject to rapid technological change, evolving industry standards and frequent new product introductions, and we must make substantial research, development and other investments, such as acquisitions, in new products, services and technologies to compete successfully. Technological innovations generally require significant research and development efforts before they are commercially viable. While we continue to invest significant resources toward advancements primarily in support of 4G- and 5G-based technologies, we also innovate across a broad spectrum of opportunities to deploy new and expanded products and enter into adjacent industry segments and/or applications by leveraging our existing technical and business expertise and/or through acquisitions.

In particular, our future growth significantly depends on new and expanded product areas, such as RFFE, and adjacent industry segments and/or applications, such as automotive, IoT (including the connected home, smart cities, wearables, voice and music and robotics), networking, computing and AI, such as machine learning, among others; our ability to develop leading and cost-effective technologies, products and services for new and expanded product areas and adjacent industry segments; and third parties incorporating our technology, products and services into devices used in these product areas, industry segments and/or applications. Accordingly, we intend to continue to make substantial investments in these new and expanded product areas, adjacent industry segments and/or applications, and in developing new products, services and technologies for these product areas, industry segments and/or applications. Our growth also depends significantly on our ability to develop 5G technologies, and to develop and commercialize products using 5G technologies.

However, our research, development and other investments in these new and expanded product areas, adjacent industry segments and/or applications, and corresponding technologies, products and services, as well as in our existing, technologies, products and services and new technologies, such as 5G, use of licensed, shared and unlicensed spectrum, and convergence of cellular and Wi-Fi, may not succeed due to, among other reasons: new industry segments, applications and/or consumer demand may not develop and/or grow as anticipated; our strategies and/or the strategies of our customers, licensees or partners may not be successful; improvements in alternate technologies in ways that reduce the advantages we anticipate from our investments; competitors' technologies, products or services being more cost effective, having more capabilities or fewer limitations or being brought to market faster than our new technologies, products and services; and competitors having longer operating histories in industry segments that are new to us. We may also underestimate the costs of or overestimate the future revenues and/or margins that could result from these investments, and these investments may not, or may take many years to, generate material returns. Further, the automotive industry is subject to long design-in time frames, long product life cycles and a high degree of regulatory and safety requirements, necessitating suppliers to the industry to comply with stringent qualification processes, very low defect rates and high reliability standards, all of which results in a significant barrier to entry and increased costs.

If our new technologies, products and/or services are not successful, or are not successful in the time frame we anticipate, we may incur significant costs and/or asset impairments, our business may not grow as anticipated, our revenues and/or margins may be negatively impacted, and/or our reputation may be harmed.

There are numerous risks associated with our operation and control of the manufacturing facilities of our joint venture with TDK, RF360 Holdings, including a higher portion of fixed costs relative to a fabless model, environmental compliance and liability, exposure to natural disasters, timely supply of equipment and materials and manufacturing difficulties.

Manufacturing facilities are characterized by a higher portion of fixed costs relative to a fabless model. In less favorable industry environments, in particular, we may be faced with a decline in the utilization rates of our manufacturing facilities due to decreases in demand for our products. During such periods, our manufacturing facilities could operate at lower capacity levels, while the fixed costs associated with full capacity continue to be incurred, resulting in lower gross profit.

We are subject to many environmental, health and safety laws and regulations in each jurisdiction in which we operate our manufacturing facilities, which govern, among other things, emissions of pollutants into the air, wastewater discharges, the use and handling of hazardous substances, waste disposal, the investigation and remediation of soil and ground water contamination and the health and safety of our employees. We are also required to obtain and maintain environmental permits from governmental authorities for certain of our operations. We cannot make assurances that we will be at all times in compliance with such laws, regulations and permits. Certain environmental laws impose strict, and in certain circumstances, joint and several, liability on current or previous owners or operators of real property for the cost of investigation, removal or remediation of hazardous substances. Certain of these laws also assess liability on persons who arrange for hazardous substances to be sent to disposal or treatment facilities when such facilities are found to be contaminated. In addition, we could also be held liable for consequences arising out of human exposure to hazardous substances or other environmental damage.

We have manufacturing facilities in Asia and Europe. If tsunamis, flooding, earthquakes, volcanic eruptions or other natural disasters or geopolitical conflicts were to damage, destroy or disrupt our manufacturing facilities, it could disrupt our operations, delay new production and shipments of inventory or result in costly repairs, replacements or other costs. In addition, natural disasters or geopolitical conflicts may result in disruptions in transportation, distribution channels or supply chains, or significant increases in the prices of raw materials.

Our manufacturing operations depend on securing raw materials and other supplies in adequate quality and quantity in a timely manner from multiple suppliers, and in some cases, we rely on a limited number of suppliers, particularly in Asia. Accordingly, there may be cases where supplies of raw materials and other products are interrupted by disaster, accident or some other event at a supplier, supply is suspended due to quality or other issues, or there is a shortage of supply due to a rapid increase in demand, which could impact production and prevent us from supplying products to our customers. If the supply-demand balance is disrupted, it may considerably increase costs of manufacturing due to increased prices we pay for raw materials or fuel. From time to time, suppliers may extend lead times, limit the amounts supplied to us or increase prices due to capacity constraints or other factors. Additionally, supply of and/or costs of raw materials may be negatively impacted by trade protection policies, such as tariffs, and/or escalating trade tensions, particularly with countries in Asia. Further, it may be difficult or impossible to substitute one piece of equipment for another or replace one type of material with another. A failure by our suppliers to deliver our requirements could result in disruptions to our manufacturing operations.

Our manufacturing processes are highly complex, require advanced and costly equipment and must be continuously modified to improve yields and performance. Difficulties in the production process can reduce yields or interrupt production, and as a result, we may not be able to deliver products or do so in a timely, cost-effective or competitive manner. Further, to remain competitive and/or meet customer demand, we may be required to improve our facilities and process technologies and carry out extensive research and development, each of which may require investment of significant amounts of capital, and may have a material adverse effect on our results of operations, financial condition and/or cash flows.

The continued and future success of our licensing programs requires us to continue to evolve our patent portfolio, and our licensing programs may be impacted by the proliferation of devices in new industry segments such as automotive and IoT, as well as the need to extend license agreements that are expiring and/or to cover additional future patents.

We own a very strong portfolio of issued and pending patents related to 3G, 4G, 5G and other technologies. It is critical that we continue to evolve our patent portfolio, particularly in 5G. If we do not maintain a strong portfolio that is applicable to current and future standards, products and services, particularly 5G, our future licensing revenues could be negatively impacted.

In addition, new connectivity and other services are emerging that rely on devices that may or may not be used on traditional cellular networks, such as devices used in the IoT and automotive industry segments. We also seek to diversify and broaden our technology licensing programs to new industry segments in which we can utilize our technology leadership. Standards, even de facto standards, that develop as these technologies mature, in particular those that do not include a base level of interoperability, may impact our ability to obtain royalties at all or that are equivalent to those that we receive for products used in cellular communications. Although we believe that our patented technologies are essential and useful to the commercialization of such services, any royalties we receive may be lower than those we receive from our current licensing program.

Further, the licenses granted to and from us under a number of our license agreements include only patents that are either filed or issued prior to a certain date. As a result, there are agreements with some licensees where later patents are not licensed by or to us. Additionally, many of our license agreements (including essentially all of our agreements in China and our recent worldwide SEP only agreements) are effective for a specified term. In order to license or to obtain a license to such later patents or after the expiration of a specified term, or to receive royalties after the specified time period, we will need to extend or modify such license agreements or enter into new license agreements with such licensees. Accordingly, to the extent not renewed on their terms or by election for an additional (generally multi-year) period, if applicable, we will need to extend or modify such license agreements or enter into new license agreements with such licensees more frequently than we have done historically. We might not be able to renew those license agreements, or enter into new license agreements, in the future without affecting the material terms and conditions of our license agreements with such licensees, and such modifications or new agreements may negatively impact our revenues. If there is a delay in renewing a license agreement prior to its expiration, there would be a delay in our ability to recognize revenues related to that licensee’s product sales.

Further, if we are unable to reach agreement on such modifications or new agreements, it could result in patent infringement litigation with such companies.

We depend on a limited number of third-party suppliers for the procurement, manufacture and testing of our products manufactured in a fabless production model. If we fail to execute supply strategies that provide technology leadership, supply assurance and low cost, our business and results of operations may be harmed. We are also subject to order and shipment uncertainties that could negatively impact our results of operations.

Our QCT segment primarily utilizes a fabless production model, which means that we do not own or operate foundries for the production of silicon wafers from which our integrated circuits are made. Other than the manufacturing facilities we now operate through our RF360 Holdings joint venture, we rely on independent third-party suppliers to perform the manufacturing and assembly, and most of the testing, of our integrated circuits. Our suppliers are also responsible for the procurement of most of the raw materials used in the production of our integrated circuits. We employ both turnkey and two-stage manufacturing models to purchase our integrated circuits. Under the turnkey model, our foundry suppliers are responsible for delivering fully assembled and tested integrated circuits. Under the two-stage manufacturing model, we purchase die in singular or wafer form from semiconductor manufacturing foundries and contract with separate third-party suppliers for manufacturing services such as wafer bump, probe, assembly and the majority of our final test requirements. The semiconductor manufacturing foundries that supply products to our QCT segment are primarily located in Asia, as are our primary warehouses where we store finished goods for fulfillment of customer orders. The following could have an adverse effect on our ability to meet customer demands and/or negatively impact our revenues, business operations, profitability and/or cash flows:

- a reduction, interruption, delay or limitation in our product supply sources;
- a failure by our suppliers to procure raw materials or to provide or allocate adequate manufacturing or test capacity for our products;
- our suppliers' inability to react to shifts in product demand or an increase in raw material or component prices;
- our suppliers' delay in developing leading process technologies, or inability to develop or maintain leading process technologies, including transitions to smaller geometry process technologies;
- the loss of a supplier or the inability of a supplier to meet performance, quality or yield specifications or delivery schedules;
- additional expense and/or production delays as a result of qualifying a new supplier and commencing volume production or testing in the event of a loss of or a decision to add or change a supplier; and/or
- natural disasters or geopolitical conflicts, particularly in Asia, impacting our suppliers.

Additionally, supply of and/or costs of raw materials may be negatively impacted by trade protection policies, such as tariffs, and/or escalating trade tensions, particularly with countries in Asia. While we have established alternate suppliers for certain technologies, we rely on sole- or limited-source suppliers for certain products, subjecting us to significant risks, including: possible shortages of raw materials or manufacturing capacity; poor product performance; and reduced control over delivery schedules, manufacturing capability and yields, quality assurance, quantity and costs. To the extent we have established alternate suppliers, these suppliers may require significant levels of support to bring complex technologies to production. As a result, we may invest a significant amount of effort and resources and incur higher costs to support and maintain such alternate suppliers. Further, any future consolidation of foundry suppliers could increase our vulnerability to sole- or limited-source arrangements and reduce our suppliers' willingness to negotiate pricing, which could negatively impact our ability to achieve cost reductions and/or which could increase our manufacturing costs. Our arrangements with our suppliers may obligate us to incur costs to manufacture and test our products that do not decrease at the same rate as decreases in pricing to our customers. Our ability, and that of our suppliers, to develop or maintain leading process technologies, including transitions to smaller geometry process technologies, and to effectively compete with the manufacturing processes and performance of our competitors, could impact our ability to introduce new products and meet customer demand, could increase our costs (possibly decreasing our margins) and could subject us to the risk of excess inventories. Our inability to meet customer demand due to sole- or limited-sourcing and/or the additional costs that we incur because of these or other supply constraints or because of the need to support alternate suppliers could negatively impact our business, our results of operations and/or cash flows.

Although we have long-term contracts with our suppliers, many of these contracts do not provide for long-term capacity commitments. To the extent we do not have firm commitments from our suppliers over a specific time period or for any specific quantity, our suppliers may allocate, and in the past have allocated, capacity to the production and testing of products for their other customers while reducing or limiting capacity to manufacture or test our products. Accordingly, capacity for our products may not be available when we need it or at reasonable prices. To the extent we do obtain long-term capacity commitments, we may incur additional costs related to those commitments and/or make non-refundable payments for capacity commitments that are not used.

One or more of our suppliers or potential alternate suppliers may manufacture CDMA- or OFDMA-based integrated circuits that compete with our products. Such suppliers could elect to allocate raw materials and manufacturing capacity to their own products and reduce or limit deliveries to us to our detriment.

In addition, we may not receive reasonable pricing, manufacturing or delivery terms from our suppliers. We cannot guarantee that the actions of our suppliers will not cause disruptions in our operations that could harm our ability to meet our delivery obligations to our customers or increase our cost of sales.

Additionally, we place orders with our suppliers using our and/or our customers' forecasts of customer demand, which are based on a number of assumptions and estimates. As we move to smaller geometry process technologies, the manufacturing lead-time increases. As a result, the orders we place with our suppliers are generally only partially covered by commitments from our customers. If we, or our customers, overestimate customer demand that is not under a binding commitment from our customer, we may experience increased excess and/or obsolete inventory, which would negatively impact our results of operations.

Claims by other companies that we infringe their intellectual property could adversely affect our business.

From time to time, companies have asserted, and may again assert, patent, copyright and other intellectual property rights against our products or products using our technologies or other technologies used in our industry. These claims have resulted and may again result in our involvement in litigation. We may not prevail in such litigation given, among other factors, the complex technical issues and inherent uncertainties in intellectual property litigation. If any of our products or services were found to infringe another company's intellectual property rights, we could be subject to an injunction or be required to redesign our products or services, which could be costly, or to license such rights and/or pay damages or other compensation to such other company. If we are unable to redesign our products or services, license such intellectual property rights used in our products or services or otherwise distribute our products (e.g., through a licensed supplier), we could be prohibited from making and selling such products or providing such services. In any potential dispute involving other companies' patents or other intellectual property, our chipset foundries, semiconductor assembly and test providers and customers could also become the targets of litigation. We are contingently liable under certain product sales, services, license and other agreements to indemnify certain customers, chipset foundries and semiconductor assembly and test service providers against certain types of liability and/or damages arising from qualifying claims of patent infringement by products or services sold or provided by us, or by intellectual property provided by us to our chipset foundries and semiconductor assembly and test service providers. Reimbursements under indemnification arrangements could have an adverse effect on our results of operations and/or cash flows. Furthermore, any such litigation could severely disrupt the supply of our products and the businesses of our chipset customers and their customers, which in turn could hurt our relationships with them and could result in a decline in our chipset sales and/or reductions in our licensees' sales, causing a corresponding decline in our chipset and/or licensing revenues. Any claims, regardless of their merit, could be time consuming to address, result in costly litigation, divert the efforts of our technical and management personnel or cause product release or shipment delays, any of which could have an adverse effect on our results of operations and cash flows.

We expect that we may continue to be involved in litigation and may have to appear in front of administrative bodies (such as the United States International Trade Commission) to defend against patent assertions against our products by companies, some of whom are attempting to gain competitive advantage or leverage in licensing negotiations. We may not be successful in such proceedings, and if we are not, the range of possible outcomes is very broad and may include, for example, monetary damages or fines or other orders to pay money, royalty payments, injunctions on the sale of certain of our integrated circuit products (and/or on the sale of our customers' devices using such products) and/or the issuance of orders to cease certain conduct and/or modify our business practices. Further, a governmental body in a particular country or region may assert, and may be successful in imposing, remedies with effects that extend beyond the borders of that country or region. In addition, a negative outcome in any such proceeding could severely disrupt the business of our chipset customers and their wireless operator customers, which in turn could harm our relationships with them and could result in a decline in our worldwide chipset sales and/or a reduction in our licensees' sales to wireless operators, causing corresponding declines in our chipset and/or licensing revenues.

Certain legal matters, including certain claims by other companies that we infringe their intellectual property, are described more fully in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.”

We may engage in strategic acquisitions, transactions or make investments, or be unable to consummate planned strategic acquisitions, which could adversely affect our results of operations or fail to enhance stockholder value.

We engage in strategic acquisitions and other transactions, including joint ventures, and make investments, which we believe are important to the future of our business, with the goal of maximizing stockholder value. We acquire businesses and other assets, including patents, technology, wireless spectrum and other intangible assets, enter into joint ventures or other strategic transactions and purchase minority equity interests in or make loans to companies that may be private and early-stage. Our strategic activities are generally focused on opening or expanding opportunities for our technologies and supporting the design and introduction of new products and services (or enhancing existing products or services) for voice and data communications and new industry segments. Recent material transactions include our RF360 Holdings joint venture with TDK Corporation and our acquisition of CSR plc. Many of our strategic activities entail a high degree of risk and require the use of domestic and/or foreign capital, and investments may not become liquid for several years after the date of the investment, if at all. Our strategic activities may not generate financial returns or result in increased adoption or continued use of our technologies, products or services. We may underestimate the costs and/or overestimate the benefits, including product, revenue, cost and other synergies and growth opportunities that we expect to realize, and we may not achieve those benefits. In some cases, we may be required to consolidate or record our share of the earnings or losses of companies in which we have acquired ownership interests. In addition, we may record impairment charges related to our strategic activities. Any losses or impairment charges that we incur related to strategic activities will have a negative impact on our financial condition and results of operations, and we may continue to incur new or additional losses related to strategic assets or investments that we have not fully impaired or exited.

Achieving the anticipated benefits of business acquisitions, including joint ventures and other strategic investments in which we have management and operational control, depends in part upon our ability to integrate the businesses in an efficient and effective manner and achieve anticipated synergies, and we may not be successful in these efforts. Such integration is complex and time consuming and involves significant challenges, including, among others: retaining key employees; successfully integrating new employees, technology, products, processes, operations (including manufacturing operations), sales and distribution channels, business models and business systems; retaining customers and suppliers of the businesses; consolidating research and development and/or supply operations; minimizing the diversion of management's attention from ongoing business matters; consolidating corporate and administrative infrastructures; and managing the increased scale, complexity and globalization of our business, operations and employee base. We may not derive any commercial value from associated technologies or products or from future technologies or products based on these technologies, and we may be subject to liabilities that are not covered by indemnification protection that we may obtain, and we may become subject to litigation. Additionally, we may not be successful in entering or expanding into new sales or distribution channels, business or operational models (including manufacturing), geographic regions, industry segments and/or categories of products served by or adjacent to the associated businesses or in addressing potential new opportunities that may arise out of the combination.

If we do not achieve the anticipated benefits of business acquisitions or other strategic activities, our business and results of operations may be adversely affected, and we may not enhance stockholder value by engaging in these transactions.

In fiscal 2018, we terminated our proposed acquisition of NXP since the acquisition had not been approved by the State Administration for Market Regulation (SAMR) in China by the date specified in the acquisition agreement. As a result, we will not realize the benefits that we anticipated from the acquisition, including, but not limited to, increased revenues; accelerated revenue diversification; significantly expanded addressable markets and opportunities; accelerated entry into new industry segments and expansion in existing industry segments; new and expanded product offerings and technologies; accelerated expansion of sales and distribution channels; cost and other synergies; and earnings accretion from the acquisition. In addition, future acquisitions may now be more difficult, complex or expensive to the extent that our reputation for our ability to consummate acquisitions has been harmed. Further, if U.S./China trade relations remain strained, our ability to consummate any transaction that would require approval from SAMR may be severely impacted.

If we are unsuccessful in executing our cost plan, our business and results of operations may be adversely affected.

In the second quarter of fiscal 2018, we announced a cost plan designed to align our cost structure to our long-term margin targets. As part of this plan, we are implementing a series of targeted reductions across our businesses to reduce annual costs by $1 billion, excluding incremental costs resulting from any future acquisition of a business. We expect these cost reductions to be fully captured in fiscal 2019.

We cannot provide assurance that our cost plan will be successful, that anticipated cost savings will be realized, that our operations, business and financial results will improve and/or that these efforts will not disrupt our operations (beyond what is intended). Our ability to achieve the anticipated cost savings and other benefits within the expected time frames is subject to many estimates and assumptions, which are subject to significant economic, competitive and other uncertainties, some of which are beyond our control. Further, we may experience delays in the timing of these efforts and/or higher than expected or unanticipated costs in implementing them. Moreover, changes in the size, alignment or organization of our workforce could adversely affect employee morale and retention, relations with customers and business partners, our ability to develop and deliver products and services as anticipated and/or impair our ability to realize our current or future business and financial objectives. If we do not succeed in these efforts, if these efforts are more costly or time-consuming than expected, if our estimates and assumptions are not correct, if we experience delays or if other unforeseen events occur, our business and results of operations may be adversely affected.

We are subject to various laws, regulations, policies and standards. Our business may suffer as a result of existing, or new or amended, laws, regulations, policies or standards and/or our failure or inability to comply with laws, regulations, policies or standards.

Our business, products and services, and those of our customers and licensees, are subject to various laws and regulations globally, as well as government policies and the specifications of international, national and regional communications standards bodies. Compliance with existing laws, regulations, policies and standards, the adoption of new laws, regulations, policies or standards, changes in the interpretation of existing laws, regulations, policies or standards, changes in the regulation of our activities by a government or standards body and/or rulings in court, regulatory, administrative or other proceedings relating to such laws, regulations, policies or standards, including, among others, those affecting licensing practices, competitive business practices, the use of our technology or products, protection of intellectual property, trade and trade protection, including tariffs, foreign currency, investments or loans, spectrum availability and license issuance, adoption of standards, the provision of device subsidies by wireless operators to their customers, taxation, export control, privacy and data protection, environmental protection, health and safety, labor and employment, human rights, corporate governance, public disclosure or business conduct could have an adverse effect on our business and results of operations.

Government policies, particularly in China, that regulate the amount and timing of funds that may flow out of a country may impact the timing of our receipt of payments from our customers and/or licensees in such country, which may negatively impact our cash flows.

Delays in government approvals or other governmental activities that could result from, among others, a decrease in or a lack of funding for certain agencies or branches of the government and/or political changes, could result in our incurring higher costs, could negatively impact our ability to timely consummate strategic transactions and/or could have other negative impacts on our business and the businesses of our customers and licensees.

National, state and local environmental laws and regulations affect our operations around the world. These laws may make it more expensive to manufacture, have manufactured and sell products, and our costs could increase if our vendors (e.g., suppliers, third-party manufacturers or utility companies) pass on their costs to us. The imposition of tariffs on raw materials or our products could have a negative impact on our revenues and/or results of operations. We are also subject to laws and regulations impacting the manufacturing operations of our RF360 Holdings joint venture. See the Risk Factor entitled "There are numerous risks associated with our operation and control of the manufacturing facilities of our joint venture with TDK, RF360 Holdings, including a higher portion of fixed costs relative to a fabless model, environmental compliance and liability, exposure to natural disasters, timely supply of equipment and materials and manufacturing difficulties."

Regulations in the United States require that we determine whether certain materials used in our products, referred to as conflict minerals, originated in the Democratic Republic of the Congo or an adjoining country (collectively, the Covered Countries), or were from recycled or scrap sources. Other countries and/or regions are expected to impose similar requirements in the future. The verification and reporting requirements, in addition to customer demands for conflict free sourcing, impose additional costs on us and on our suppliers and may limit the sources or increase the prices of materials used in our products. Further, if we are unable to determine that the conflict minerals used in our products do not directly or indirectly finance or benefit armed groups in the Covered Countries, we may face challenges with our customers that place us at a competitive disadvantage, and our reputation may be harmed. Similarly, other laws and regulations have been adopted or proposed that require additional transparency regarding the employment practices of our suppliers, and any failure to maintain responsible sourcing practices could also adversely affect our relationships with customers and our reputation.

Laws, regulations, policies and standards are complex and changing and may create uncertainty regarding compliance. Laws, regulations, policies and standards are subject to varying interpretations in many cases, and their application in practice may evolve over time. As a result, our efforts to comply may fail, particularly if there is ambiguity as to how they should be applied in practice. Failure to comply with any law, regulation, policy or standard may adversely affect our business, results

of operations and/or cash flows. New laws, regulations, policies and standards or evolving interpretations of legal requirements may cause us to incur higher costs as we revise current practices, policies and/or procedures and may divert management time and attention to compliance activities.

Our use of open source software may harm our business.

Certain of our software and our suppliers' software may contain or may be derived from "open source" software, and we have seen, and believe we will continue to see, an increase in customers requesting that we develop products, including software associated with our integrated circuit products, that incorporate open source software elements and operate in an open source environment, which, under certain open source licenses, may offer accessibility to a portion of a product's source code and may expose related intellectual property to adverse licensing conditions. Licensing of such software may impose certain obligations on us if we were to distribute derivative works of the open source software. For example, these obligations may require us to make source code for the derivative works available to our customers in a manner that allows them to make such source code available to their customers or license such derivative works under a particular type of license that is different than what we customarily use to license our software. Developing open source products, while adequately protecting the intellectual property rights upon which our licensing business depends, may prove burdensome and time-consuming under certain circumstances, thereby placing us at a competitive disadvantage, and we may not adequately protect our intellectual property rights. Also, our use and our customers' use of open source software may subject our products and our customers' products to governmental scrutiny and delays in product certification, which could cause customers to view our products as less desirable than our competitors' products. While we believe we have taken appropriate steps and employ adequate controls to protect our intellectual property rights, our use of open source software presents risks that could have an adverse effect on these rights and on our business.

Our stock price, earnings and the fair value of our investments are subject to substantial quarterly and annual fluctuations and to market downturns.

Our stock price and earnings have fluctuated in the past and are likely to fluctuate in the future. Factors that may have a significant impact on the market price of our stock and/or earnings include those identified throughout this Risk Factors section, volatility of the stock market in general and technology-based companies in particular, announcements concerning us, our suppliers, our competitors or our customers or licensees and variations between our actual financial results or guidance and expectations of securities analysts or investors, among others. Further, increased volatility in the financial markets and/or overall economic conditions may reduce the amounts that we realize in the future on our cash equivalents and/or marketable securities and may reduce our earnings as a result of any impairment charges that we record to reduce recorded values of marketable securities to their fair values.

In the past, securities class action litigation has been brought against companies following periods of volatility in the market price of their securities. Due to changes in our stock price, we are and may in the future be the target of securities litigation. Securities litigation could result in substantial uninsured costs and divert management's attention and our resources. Certain legal matters, including certain securities litigation brought against us, are described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies."

There are risks associated with our indebtedness and our significant proposed stock repurchase program.

Our outstanding indebtedness and any additional indebtedness we incur, may have negative consequences on our business, including, among others:

- requiring us to use cash to pay the principal of and interest on our indebtedness, thereby reducing the amount of cash available for other purposes;
- limiting our ability to obtain additional financing for working capital, capital expenditures, acquisitions, stock repurchases, dividends or other general corporate and other purposes;
- limiting our flexibility in planning for, or reacting to, changes in our business and our industry; and/or
- increasing our vulnerability to interest rate fluctuations to the extent a portion of our debt has variable interest rates.

Our ability to make payments of principal and interest on our indebtedness depends upon our future performance, which is subject to general economic conditions, industry cycles and financial, business and other factors, including factors which negatively impact our cash flows, such as licensees withholding some or all of the royalty payments they owe to us or paying fines in connection with regulatory investigations, many of which are beyond our control. If we are unable to generate sufficient cash flow from operations in the future to service our debt, we may be required to, among other things: refinance or restructure all or a portion of our indebtedness; reduce or delay planned capital or operating expenditures; or sell selected assets. Such measures might not be sufficient to enable us to service our debt. In addition, any such refinancing, restructuring or sale of assets might not be available on economically favorable terms or at all, and if prevailing interest rates at the time of any such refinancing and/or restructuring are higher than our current rates, interest expense related to such refinancing and/or restructuring would increase. If there are adverse changes in the ratings assigned to our debt securities by credit rating agencies, our borrowing costs, our ability to access debt in the future and/or the terms of such debt could be adversely affected.

We have implemented a stock repurchase program to repurchase up to $30 billion of our outstanding common stock. This stock repurchase program has significantly reduced and will continue to reduce the amount of cash that we have available to fund our operations, including research and development, working capital, capital expenditures, acquisitions, investments, dividends and other corporate purposes; and increases our exposure to adverse economic, market, industry and competitive conditions and developments, and other changes in our business and our industry. In addition, this significant decrease in our cash reserves exacerbates the risks described above associated with our indebtedness.

Our business and operations could suffer in the event of security breaches of our information technology systems, or other misappropriation of our intellectual property or proprietary or confidential information.

Third parties regularly attempt to gain unauthorized access to our information technology systems, and most of such attempts are increasingly more sophisticated. These attempts, which might be related to industrial or other espionage, criminal hackers or state-sponsored intrusions, include trying to covertly introduce malware to our computers and networks, including those in our manufacturing operations, and impersonating authorized users, among others. Such attempts could result in the misappropriation, theft, misuse, disclosure or loss or destruction of the intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties, as well as damage to or disruptions in our information technology systems. These threats are constantly evolving, thereby increasing the difficulty of successfully defending against them or implementing adequate preventative measures.

We seek to detect and investigate all security incidents and to prevent their recurrence but attempts to gain unauthorized access to our information technology systems may be successful, and in some cases, we might be unaware of an incident or its magnitude and effects. The misappropriation, theft, misuse, disclosure or loss or destruction of the intellectual property, or the proprietary, confidential or personal information, of us or our employees, customers, licensees, suppliers or other third parties could harm our competitive position, reduce the value of our investment in research and development and other strategic initiatives, cause us to lose business, damage our reputation, subject us to legal or regulatory proceedings, cause us to incur other loss or liability and/or otherwise adversely affect our business. We expect to continue to devote significant resources to the security of our information technology systems.

In addition, employees and former employees, in particular former employees who become employees of our competitors, customers or licensees, may misappropriate, use, publish or provide to our competitors, customers or licensees our intellectual property and/or proprietary or confidential business information. Similarly, we provide access to certain of our intellectual property and/or proprietary and/or confidential business information to our direct and indirect customers and licensees, who may wrongfully use such intellectual property and/or information and/or wrongfully disclose such intellectual property and/or information to third parties, including our competitors.

Potential tax liabilities could adversely affect our results of operations.

We are subject to income taxes in the United States and numerous foreign jurisdictions, including Singapore where our QCT segment's non-U.S. headquarters is located. Significant judgment is required in determining our provision for income taxes. We regularly are subject to examination of our tax returns and reports by taxing authorities in the United States federal jurisdiction and various state and foreign jurisdictions, most notably in countries where we earn a routine return and the tax authorities believe substantial value-add activities are performed. Our current examinations are at various stages with respect to assessments, claims, deficiencies and refunds. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. Although we believe that our tax estimates are reasonable at September 30, 2018, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our historical income tax provisions and accruals. In such case, our income tax provision, results of operations and/or cash flows in the period or periods in which that determination is made could be negatively affected.

On December 22, 2017, tax reform legislation known as the Tax Cuts and Jobs Act (the Tax Legislation) was enacted in the United States. Given the amount and complexity of the changes in tax law resulting from the Tax Legislation, we have not finalized the accounting for the income tax effects of the Tax Legislation. This includes the provisional amounts recorded related to the repatriation tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (Toll Charge). Further, we are in the process of analyzing the effects of new taxes due on certain foreign income, such as GILTI (global intangible low-taxed income), BEAT (base-erosion anti-abuse tax), FDII (foreign-derived intangible income) and limitations on interest expense deductions (if certain conditions apply) that are effective starting in fiscal 2019, and other provisions of the Tax Legislation. The impact of the Tax Legislation related to the Toll Charge may differ from this estimate, possibly materially, during the one-year measurement period due to, among other things, further refinement of our calculations, changes in interpretations and assumptions we have made, guidance that may be issued and actions we may take as a result of the Tax Legislation.

We have tax incentives in Singapore provided that we meet specified employment and other criteria, and as a result of the expiration of these incentives, our Singapore tax rate is expected to increase in fiscal 2022 and again in fiscal 2027. If we do not meet the criteria required to retain such incentives, our Singapore tax rate could increase prior to fiscal 2022, and our results of operations and cash flows could be adversely affected.

Tax rules may change in a manner that adversely affects our future reported results of operations or the way we conduct our business.

Further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project that was undertaken by the Organization for Economic Co-operation and Development (OECD). The OECD, which represents a coalition of member countries, recommended changes to numerous long-standing tax principles related to transfer pricing. These changes, as adopted by countries, may increase tax uncertainty and may adversely affect our provision for income taxes, results of operations and/or cash flow. We have not yet determined what changes, if any, may be needed to our operations or structure to address BEPS. If our effective tax rates were to increase, particularly in the United States or Singapore, our results of operations, cash flows and/or financial condition could be adversely affected.

Global, regional or local economic conditions, or political actions including trade protection policies such as tariffs, that impact the mobile communications industry or the other industries in which we operate could negatively affect the demand for our products and services and our customers' or licensees' products and services, which may negatively affect our revenues.

A decline in global, regional or local economic conditions or a slow-down in economic growth, or political actions including trade protection policies such as tariffs, particularly in geographic regions with high concentrations of wireless voice and data users or high concentrations of our customers or licensees, could have adverse, wide-ranging effects on demand for our products and for the products and services of our customers or licensees, particularly equipment manufacturers or others in the wireless communications industry who buy their products, such as wireless operators. Any prolonged economic downturn or "trade war" may result in a decrease in demand for our products or technologies; the products of our customers or licensees; the insolvency of key suppliers, customers or licensees; delays in reporting and/or payments from our licensees and/or customers; failures by counterparties; and negative effects on wireless device inventories. In addition, our customers' ability to purchase or pay for our products and services and network operators' ability to upgrade their wireless networks could be adversely affected by economic conditions, leading to a reduction, cancelation or delay of orders for our products or services.

We may not be able to attract and retain qualified employees.

Our future success depends largely upon the continued service of our executive officers and other key management and technical personnel, and on our ability to continue to identify, attract, retain and motivate them, which may become increasingly difficult in an environment of cost reductions. Implementing our business strategy requires specialized engineering and other talent, as our revenues are highly dependent on technological and product innovations. The market for employees in our industry is extremely competitive. Further, existing immigration laws make it more difficult for us to recruit and retain highly skilled foreign national graduates of universities in the United States, making the pool of available talent even smaller. If we are unable to attract and retain qualified employees, our business may be harmed.

Currency fluctuations could negatively affect future product sales or royalty revenues, harm our ability to collect receivables or increase the U.S. dollar cost of our products.

Our customers sell their products throughout the world in various currencies. Our consolidated revenues from international customers and licensees as a percentage of our total revenues were greater than 90% in each of the last three fiscal years. Adverse movements in currency exchange rates may negatively affect our business, revenues, results of operations and/or cash flows due to a number of factors, including, among others:

- Our products and those of our customers and licensees that are sold outside the United States may become less price-competitive, which may result in reduced demand for those products and/or downward pressure on average selling prices;

- Certain of our revenues that are derived from products that are sold in foreign currencies could decrease, resulting in lower revenues, cash flows and margins;

- Certain of our revenues, such as royalties, that are derived from licensee or customer sales denominated in foreign currencies could decrease, resulting in lower revenues and cash flows;

- Our foreign suppliers may raise their prices if they are impacted by currency fluctuations, resulting in higher than expected costs and lower margins;

- Certain of our costs that are denominated in foreign currencies could increase, resulting in higher than expected costs and cash outflows; and/or

- Foreign exchange hedging transactions that we engage in to reduce the impact of currency fluctuations may require the payment of structuring fees, limit the U.S. dollar value of royalties from licensees' sales that are denominated in foreign currencies, cause earnings volatility if the hedges do not qualify for hedge accounting and expose us to counterparty risk if the counterparty fails to perform.

Failures in our products or services or in the products or services of our customers or licensees, including those resulting from security vulnerabilities, defects or errors, could harm our business.

The use of devices containing our products to interact with untrusted systems or otherwise access untrusted content creates a risk of exposing the system hardware and software in those devices to malicious attacks. While we continue to focus on this issue and are taking measures to safeguard our products from cybersecurity threats, device capabilities continue to evolve, enabling more elaborate functionality and applications, and increasing the risk of security failures. Further, our products are inherently complex and may contain defects or errors that are detected only when the products are in use. Because our products and services are responsible for critical functions in our customers' products and/or networks, security failures, defects or errors in our products or services could have an adverse impact on us, on our customers and/or on the end users of our customers' products. Such adverse impact could include shipment delays; product liability claims or recalls; write-offs of our inventories, property, plant and equipment and/or intangible assets; unfavorable purchase commitments; a shift of business to our competitors; a decrease in demand for connected devices and wireless services; damage to our reputation and our customer relationships; regulatory actions; and other financial liability or harm to our business. Further, security failures, defects or errors in the products of our customers or licensees could have an adverse impact on our results of operations and/or cash flows due to a delay or decrease in demand for our products or services generally, and our premium-tier products in particular, among other factors. Development of products and features in new domains of technology and the migration to integrated circuit technologies with smaller geometric feature sizes are complex and add risk to manufacturing yields and reliability. Further, manufacturing, testing, marketing and use of our products and those of our customers and licensees entail the risk of product liability.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

At September 30, 2018, we occupied the following facilities (square footage in millions):

	United States	Other Countries	Total
Owned facilities	4.5	0.3	4.8
Leased facilities	1.1	5.1	6.2
Total	5.6	5.4	11.0

Our headquarters as well as certain research and development, manufacturing and network management hub operations are located in San Diego, California. Additionally, our QCT segment's non-United States headquarters is located in Singapore. Our consolidated RF360 Holdings joint venture with TDK leases manufacturing facilities in Germany, China and Singapore. We also own and lease properties around the world for use as sales and administrative offices and research and development centers, primarily in the United States and India. Our facility leases expire at varying dates through 2026, not including renewals that are at our option. Several other owned and leased facilities are under construction totaling approximately 437,000 additional square feet.

We believe that our facilities are suitable and adequate for our present purposes and that the productive capacity in facilities that are not under construction is substantially utilized. We do not identify or allocate facilities by operating segment. Additional information on net property, plant and equipment by geography is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 8. Segment Information.” In the future, we may need to purchase, build or lease additional facilities to meet the requirements projected in our long-term business plan.

Item 3. Legal and Regulatory Proceedings

Information regarding legal and regulatory proceedings is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.” We are also engaged in numerous other legal actions arising in the ordinary course of our business and, while there can be no assurance, we believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information and Dividends

Our common stock is traded on the NASDAQ Global Select Market (NASDAQ) under the symbol "QCOM." At November 5, 2018, there were 6,887 holders of record of our common stock.

We intend to continue to pay quarterly dividends, subject to capital availability and our view that cash dividends are in the best interests of our stockholders. Future dividends may be affected by, among other items, our views on potential future capital requirements, including those relating to research and development, creation and expansion of sales and distribution channels, investments and acquisitions, legal risks, withholding of payments by one or more of our significant licensees and/or customers, fines by government agencies and/or adverse rulings by a court or arbitrator in a legal matter, stock repurchase programs, debt issuances, changes in federal and state income tax law and changes to our business model.

Share-Based Compensation

We primarily issue restricted stock units under our equity compensation plans, which are part of a broad-based, long-term retention program that is intended to attract and retain talented employees and directors and align stockholder and employee interests.

Our 2016 Long-Term Incentive Plan (2016 Plan) provides for the grant of both incentive and nonstatutory stock options, stock appreciation rights, restricted stock, unrestricted stock, restricted stock units, performance units, performance shares, deferred compensation awards and other stock-based awards. Restricted stock units generally vest over periods of three years from the date of grant. Stock options vest over periods not exceeding five years and are exercisable for up to ten years from the grant date. The Board of Directors may amend or terminate the 2016 Plan at any time, with certain amendments also requiring stockholder approval.

Additional information regarding our share-based compensation plans and plan activity for fiscal 2018, 2017 and 2016 is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 5. Employee Benefit Plans."

Issuer Purchases of Equity Securities

Issuer purchases of equity securities during the fourth quarter of fiscal 2018 were:

	Total Number of Shares Purchased	Average Price Paid Per Share (1)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (2)
	(In thousands)		(In thousands)	(In millions)
June 25, 2018 to July 22, 2018	—	$ —	—	$ 9,000
July 23, 2018 to August 26, 2018	—	—	—	30,000
August 27, 2018 to September 30, 2018				
Accelerated share repurchases (3)	178,397		178,397	14,000
Other repurchases (4)	76,205	67.50	76,205	8,856
Total	254,602		254,602	

(1) Average Price Paid Per Share excludes cash paid for commissions.

(2) On July 26, 2018, we announced a repurchase program authorizing us to repurchase up to $30 billion of our common stock replacing the existing $10 billion stock repurchase authorization. At September 30, 2018, $8.9 billion remained authorized for repurchase. The stock repurchase program has no expiration date. Since September 30, 2018, we repurchased and retired 8.5 million shares of common stock for $542 million.

(3) In September 2018, we entered into three accelerated share repurchase agreements (ASR Agreements) to repurchase an aggregate of $16.0 billion of our common stock. During the fourth quarter of fiscal 2018, 178.4 million shares were initially delivered to us under the ASR Agreements and were retired. Pursuant to the terms of the ASR Agreements, the final number of shares and the average

purchase price will be determined at the end of the applicable purchase periods, which are scheduled to occur in August 2019 but may occur earlier in certain circumstances.

(4) Other repurchases result from the completion of a “modified Dutch auction” tender offer in August 2018.

Item 6. Selected Financial Data

The following data should be read in conjunction with the annual consolidated financial statements, related notes and other financial information appearing elsewhere herein.

	Years Ended (1)				
	September 30, 2018	September 24, 2017	September 25, 2016	September 27, 2015	September 28, 2014
	(In millions, except per share data)				
Statement of Operations Data:					
Revenues	$ 22,732	$ 22,291	$ 23,554	$ 25,281	$ 26,487
Operating income	742	2,614	6,495	5,776	7,550
(Loss) income from continuing operations (2)	(4,864)	2,465	5,702	5,268	7,534
Discontinued operations, net of income taxes	—	—	—	—	430
Net (loss) income attributable to Qualcomm (2)	(4,864)	2,466	5,705	5,271	7,967
Per Share Data:					
Basic (loss) earnings per share attributable to Qualcomm:					
Continuing operations	$ (3.32)	$ 1.67	$ 3.84	$ 3.26	$ 4.48
Discontinued operations	—	—	—	—	0.25
Net (loss) income	(3.32)	1.67	3.84	3.26	4.73
Diluted (loss) earnings per share attributable to Qualcomm:					
Continuing operations	(3.32)	1.65	3.81	3.22	4.40
Discontinued operations	—	—	—	—	0.25
Net (loss) income	(3.32)	1.65	3.81	3.22	4.65
Dividends per share announced	2.38	2.20	2.02	1.80	1.54
Balance Sheet Data:					
Cash, cash equivalents and marketable securities (3)	$ 12,123	$ 38,578	$ 32,350	$ 30,947	$ 32,022
Total assets (3)	32,686	65,486	52,359	50,796	48,574
Short-term debt (4)	1,005	2,495	1,749	1,000	—
Long-term debt (5)	15,365	19,398	10,008	9,969	—
Other long-term liabilities (6)	1,225	2,432	895	817	428
Total stockholders' equity (3)	928	30,746	31,768	31,414	39,166

(1) Our fiscal year ends on the last Sunday in September. The fiscal year ended September 30, 2018 included 53 weeks. The fiscal years ended September 24, 2017, September 25, 2016, September 27, 2015 and September 28, 2014 each included 52 weeks.

(2) Revenues in fiscal 2018 were negatively impacted by our continued dispute with Apple and its contract manufacturers, partially offset by $600 million paid under an interim agreement with the other licensee in dispute (which dispute was previously disclosed). Operating income in fiscal 2018 was further negatively impacted by a $2.0 billion charge related to the NXP termination fee, a $1.2 billion charge related to the fine imposed by the European Commission and $629 million in charges related to our Cost Plan, partially offset by a $676 million benefit resulting from the settlement with the Taiwan Fair Trade Commission (TFTC). Additionally, net loss for fiscal 2018 was negatively impacted by the $5.7 billion charge related to the Tax Legislation.

Revenues in fiscal 2017 were negatively impacted by actions taken by Apple and its contract manufacturers and the previously disclosed dispute with another licensee, who did not fully report or fully pay royalties due in the last three quarters of fiscal 2017, as well as a $940 million reduction to revenues recorded related to the BlackBerry arbitration. Operating income was further negatively impacted by $927 million and $778 million in charges related to the fines imposed by the Korea Fair Trade Commission and TFTC, respectively.

(3) In the fourth quarter of fiscal 2018, we announced a stock repurchase program authorizing us to repurchase up to $30 billion of our common stock. Under this program, we completed a tender offer and paid an aggregate of $5.1 billion to repurchase shares of our common stock and entered into three accelerated share repurchase agreements to repurchase an aggregate of $16.0 billion of our

common stock, resulting in significant reductions to the balances of our cash, cash equivalents and marketable securities, total assets and total stockholders' equity.

(4) Short-term debt was comprised of outstanding commercial paper and, in fiscal 2017, the current portion of long-term debt.

(5) Long-term debt was comprised of floating- and fixed-rate notes.

(6) Other long-term liabilities in this balance sheet data exclude unearned revenues.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

In addition to historical information, the following discussion contains forward-looking statements that are subject to risks and uncertainties. Actual results may differ materially from those referred to herein due to a number of factors, including but not limited to risks described in "Part I, Item 1A. Risk Factors" and elsewhere in this Annual Report.

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included in "Part II, Item 8. Financial Statements and Supplementary Data" of this Annual Report.

Fiscal 2018 Overview

Revenues were $22.7 billion, an increase of 2% from fiscal 2017, with net loss attributable to Qualcomm of $4.9 billion, compared to net income of $2.5 billion in fiscal 2017. Highlights and other events from fiscal 2018 included:

- The transition of wireless networks and devices to 3G/4G (CDMA-single mode, OFDMA-single mode and CDMA/OFDMA multi-mode) continued around the world. 3G/4G connections increased to approximately 5.5 billion, up 17% year-over-year, and represent approximately 69% of total mobile connections at the end of fiscal 2018, up from 60% at the end of fiscal 2017.(1)

- We continue to invest significant resources toward advancements primarily in support of 4G- and 5G-based technologies as well as other technologies to extend the demand for our products and generate new or expanded licensing opportunities, including within adjacent industry segments outside traditional cellular industries, such as automotive, the Internet of Things (IoT) and networking.

- QCT results in fiscal 2018 were positively impacted by results from our RF360 Holdings joint venture, which was formed in the second quarter of fiscal 2017, and higher demand from OEMs in China, partially offset by lower modem sales to Apple.

- QTL results were negatively impacted by our continued dispute with Apple and its contract manufacturers (who are Qualcomm licensees). We did not record any revenues in fiscal 2018 for royalties due on sales of Apple's products. QTL revenues in fiscal 2018 included $600 million paid under an interim agreement with the other licensee in dispute (which dispute was previously disclosed). This represents a partial payment for royalties due after the second quarter of fiscal 2017 by that other licensee while negotiations continue. This payment does not reflect the full amount of royalties due under the underlying license agreement.

- In the first quarter of fiscal 2018, tax reform legislation known as the Tax Cuts and Jobs Act (the Tax Legislation) was enacted in the United States. As a result of such enactment, net loss for fiscal 2018 included an estimated $5.7 billion charge to income tax expense, comprised of a one-time tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (the Toll Charge) of $5.2 billion and a charge of $438 million resulting from the remeasurement of deferred tax assets and liabilities that existed at the end of fiscal 2017 at a lower enacted corporate tax rate Further, our federal statutory income tax rate for fiscal 2018 reflected a blended rate of approximately 25%.

- In January 2018, the European Commission (EC) issued a decision finding that certain terms of an agreement with Apple violate European Union competition law and imposed a fine of 997 million Euros ($1.2 billion), which was recorded as a charge to other expenses in the first quarter of fiscal 2018. We provided financial guarantees to satisfy the obligation in lieu of cash payment while we appeal the EC's decision.

- In the second quarter of fiscal 2018, we announced a Cost Plan designed to align our cost structure to our long-term margin targets, under which we continue to execute on a series of targeted actions across our businesses to reduce annual costs by $1 billion, excluding incremental costs resulting from any future acquisition of a business. We expect these cost reductions to be fully captured in fiscal 2019. We recorded restructuring and restructuring-related charges of $687 million in fiscal 2018 related to our Cost Plan.

- In the fourth quarter of fiscal 2018, we reached a settlement with the Taiwan Fair Trade Commission (TFTC) resolving the TFTC's investigation alleging that we violated the Taiwan Fair Trade Act. As a result of the settlement, the parties agreed that the amounts we paid towards the previously imposed fine will be retained by the TFTC, and no other amounts will be due. As a result, in the fourth quarter of fiscal 2018 we reversed the remaining $676 million accrual that was initially recorded in fiscal 2017 as a benefit to other expense.

- In the fourth quarter of fiscal 2018, we terminated the definitive agreement under which we proposed to acquire NXP Semiconductors N.V. (NXP). In accordance with the terms of the purchase agreement, we paid NXP a termination fee of $2.0 billion, which was recorded as a charge to other expense in the fourth quarter of fiscal 2018.

- In the fourth quarter of fiscal 2018, following the termination of our agreement to acquire NXP, we announced a stock repurchase program authorizing us to repurchase up to $30 billion of our common stock, the large majority of which we expect to complete by the end of fiscal 2019. In August 2018, we completed a tender offer and paid an aggregate of $5.1 billion to repurchase 76.2 million shares of our common stock. In September 2018, we entered into three accelerated share repurchase agreements to repurchase an aggregate of $16.0 billion of our common stock resulting in an initial delivery to us of 178.4 million shares of our common stock.

(1) According to GSMA Intelligence estimates as of November 5, 2018 (estimates excluded Wireless Local Loop).

Our Business and Operating Segments

We develop and commercialize foundational technologies and products used in mobile devices and other wireless products, including network equipment, broadband gateway equipment and consumer electronics devices. We derive revenues principally from sales of integrated circuit products and licensing our intellectual property, including patents, software and other rights.

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on CDMA, OFDMA and other technologies for use in mobile devices, wireless networks, devices used in IoT, broadband gateway equipment, consumer electronic devices and automotive telematics and infotainment systems. QTL grants licenses to use portions of its intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments. We also have nonreportable segments, including our cyber security solutions (formerly Qualcomm Government Technologies or QGOV), mobile health, small cells and other wireless technology and service initiatives.

Our reportable segments are operated by QUALCOMM Incorporated and its direct and indirect subsidiaries. Substantially all of our products and services businesses, including QCT, and substantially all of our engineering, research and development functions, are operated by Qualcomm Technologies, Inc. (QTI), a wholly-owned subsidiary of QUALCOMM Incorporated, and QTI's subsidiaries. QTL is operated by QUALCOMM Incorporated, which owns the vast majority of our patent portfolio. Neither QTI nor any of its subsidiaries has any right, power or authority to grant any licenses or other rights under or to any patents owned by QUALCOMM Incorporated.

Further information regarding our business and operating segments is provided in "Part I, Item 1. Business" of this Annual Report.

Seasonality. Many of our products and/or much of our intellectual property are incorporated into consumer wireless devices, which are subject to seasonality and other fluctuations in demand. As a result, QCT has tended historically to have stronger sales toward the end of the calendar year as manufacturers prepare for major holiday selling seasons. Similarly, because QTL has historically recognized royalty revenues when royalties are reported by licensees, QTL has tended to record higher royalty revenues in the first calendar quarter when licensees report their sales made in the fourth calendar quarter. These trends may or may not continue in the future, in part depending on the amount of QCT revenues from modem sales for iPhone products and QTL royalties on sales of Apple's products, both of which have been significant drivers of our historical seasonality. Further, starting in the first quarter of fiscal 2019, seasonal trends for QTL will be impacted by the adoption of the new guidance related to revenue recognition pursuant to which we will be required to estimate and recognize sales-based royalties in the period in which the associated sales occur, resulting in an acceleration of revenue recognition by one quarter compared to the current method.

We have also experienced fluctuations in revenues due to the timing of conversions and expansions of 3G and 4G networks by wireless operators and the timing of launches of flagship wireless devices and consumer demand for wireless devices that incorporate our products and/or intellectual property. The seasonal trends for QTL have been, and may in the future be, impacted by disputes and/or resolutions with licensees.

Results of Operations

Revenues (in millions)

	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change

Equipment and services	$ 17,400	$ 16,647	$ 15,467	$ 753	$ 1,180
Licensing	5,332	5,644	8,087	(312)	(2,443)
	$ 22,732	$ 22,291	$ 23,554	$ 441	$ (1,263)

2018 vs. 2017
The increase in revenues in fiscal 2018 was primarily due to:

+ $962 million reduction to licensing revenues recorded in fiscal 2017 related to the BlackBerry arbitration
+ $745 million in higher equipment and services revenues from our QCT segment
- $1.3 billion in lower licensing revenues from our QTL segment
- $100 million reduction to licensing revenues recorded in fiscal 2018 related to a portion of a business arrangement that resolved a legal dispute

2017 vs. 2016
The increase in revenues in fiscal 2017 was primarily due to:

+ $1.1 billion in higher equipment and services revenues from our QCT segment
+ $66 million in higher equipment and services revenues from our QSI segment
- $1.2 billion in lower licensing revenues from our QTL segment
- $962 million reduction to licensing revenues recorded in fiscal 2017 related to the BlackBerry arbitration
- $103 million in lower licensing revenues of one of our nonreportable segments

Revenue Concentrations

In fiscal 2018, revenues from Samsung Electronics, Xiaomi Corporation and suppliers to Apple Inc. each comprised more than 10% of consolidated revenues. In fiscal 2018 and 2017, combined revenues from GuangDong OPPO Mobile Telecommunications Corp. Ltd. and vivo Communication Technology Co., Ltd., and their respective affiliates, also comprised more than 10% of consolidated revenues. In fiscal 2017 and 2016, revenues from Samsung Electronics and suppliers to Apple Inc. each comprised more than 10% of consolidated revenues. QCT and QTL segment revenues related to the products of these customers/licensees comprised 52%, 58% and 54% of total consolidated revenues in fiscal 2018, 2017 and 2016, respectively.

Revenues from customers in China (including Hong Kong) and South Korea comprised 67% and 14%, respectively, of total consolidated revenues for fiscal 2018, compared to 65% and 16%, respectively, for fiscal 2017, and 57% and 17%, respectively, for fiscal 2016. We report revenues from external customers by country based on the location to which our products or services are delivered, which for QCT is generally the country in which our customers manufacture their products, or for licensing revenues, the invoiced addresses of our licensees. As a result, the revenues by country presented herein are not necessarily indicative of either the country in which the devices containing our products and/or intellectual property are ultimately sold to consumers or the country in which the companies that sell the devices are headquartered. For example, China revenues could include revenues related to shipments of integrated circuits for a company that is headquartered in South Korea but that manufactures devices in China, which devices are then sold to consumers in Europe and/or the United States.

Costs and Expenses (in millions)

	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change
Cost of revenues	$ 10,244	$ 9,792	$ 9,749	$ 452	$ 43
Gross margin	55 %	56 %	59 %		

2018 vs. 2017
The decrease in margin percentage in fiscal 2018 was primarily due to:

- decrease in higher margin QTL licensing revenues as a proportion of total revenues
- reduction to licensing revenues recorded in fiscal 2018 related to a portion of a business arrangement that resolved a legal dispute

+ reduction to licensing revenues recorded in fiscal 2017 related to the BlackBerry arbitration

2017 vs. 2016
The decrease in margin percentage in fiscal 2017 was primarily due to:

- decrease in higher margin QTL licensing revenues as a proportion of total revenues
- reduction to licensing revenues recorded in fiscal 2017 related to the BlackBerry arbitration
+ increase in QCT margin

Our margin percentage may continue to fluctuate in future periods depending on the mix of segment results as well as products sold, competitive pricing, new product introduction costs and other factors, including disputes and/or resolutions with licensees.

	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change
Research and development	$ 5,625	$ 5,485	$ 5,151	$ 140	$ 334
% of revenues	25 %	25 %	22 %		

2018 vs. 2017

The dollar increase in research and development expenses in fiscal 2018 was primarily due to:

+ $168 million, net of cost decreases driven by actions initiated under our Cost Plan, in higher costs related to the development of wireless and integrated circuit technologies, including 5G technologies and RFFE technologies from our RF360 Holdings joint venture, which was formed in the second quarter of fiscal 2017, and related software products

- $30 million impairment charge on certain intangible assets recorded in fiscal 2017

2017 vs. 2016

The dollar increase in research and development expenses in fiscal 2017 was primarily due to:

+ $372 million, net of cost decreases driven by actions initiated under our 2015 Strategic Realignment Plan, in higher costs related to the development of integrated circuit technologies, including 5G technologies and RFFE technologies from our RF360 Holdings joint venture, which was formed in the second quarter of fiscal 2017, and related software products

In fiscal 2018, all of the costs ($474 million) related to pre-commercial research and development of 5G technologies were included in unallocated corporate research and development expenses. Beginning in the first quarter of fiscal 2019, all research and development costs associated with 5G technologies will be included in segment results. Additionally, beginning in the first quarter of fiscal 2019, certain research and development costs associated with early research and development that have historically been included in our QCT segment will be allocated to our QTL segment. The net effect of these changes is expected to negatively impact QTL's EBT in fiscal 2019 by approximately $500 million and to not have a significant impact on QCT EBT in fiscal 2019.

	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change
Selling, general and administrative	$ 2,986	$ 2,658	$ 2,385	$ 328	$ 273
% of revenues	13 %	12 %	10 %		

2018 vs. 2017

The dollar increase in selling, general and administrative expenses in fiscal 2018 was primarily due to:

+ $325 million in higher litigation costs, with total litigation costs of $554 million and $229 million in fiscal 2018 and fiscal 2017, respectively

+ $45 million in bad debt expense recorded in fiscal 2018

+ $42 million in higher professional fees and costs related to other legal matters, which was primarily driven by Broadcom's withdrawn takeover proposal, partially offset by lower third-party acquisition and integration services fees

- $40 million in lower amortization, primarily from our RF360 Holdings joint venture

- $37 million in lower share-based compensation expense, primarily due to actions initiated under our Cost Plan

2017 vs. 2016

The dollar increase in selling, general and administrative expenses in fiscal 2017 was primarily due to:

+ $136 million in higher professional services fees, primarily related to third-party acquisition and integration services resulting from the proposed acquisition of NXP

+ $70 million in higher costs related to litigation and other legal matters

+ $33 million in higher employee-related expenses, primarily related to our RF360 Holdings joint venture, which was formed in the second quarter of fiscal 2017

	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change
Other	$ 3,135	$ 1,742	$ (226)	$ 1,393	$ 1,968

2018

Other expenses in fiscal 2018 consisted of:

+ $2.0 billion charge related to the NXP termination fee
+ $1.2 billion charge related to the EC fine
+ $629 million in restructuring and restructuring-related charges related to our Cost Plan
- $676 million benefit related to the settlement of the TFTC investigation

2017

Other expenses in fiscal 2017 consisted of:

+ $927 million charge related to the Korea Fair Trade Commission (KFTC) fine, including related foreign currency losses
+ $778 million charge related to the TFTC fine
+ $37 million in restructuring and restructuring-related charges related to our 2015 Strategic Realignment Plan

2016

Other income in fiscal 2016 consisted of:

+ $380 million gain on the sale of wireless spectrum
+ $48 million gain on the sale of our business that provided augmented reality applications
- $202 million in restructuring and restructuring-related charges related to our 2015 Strategic Realignment Plan

Interest Expense and Investment and Other Income, Net (in millions)

	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change
Interest expense	$ 768	$ 494	$ 297	$ 274	$ 197
Investment and other income, net					
Interest and dividend income	$ 625	$ 619	$ 611	$ 6	$ 8
Net realized gains on marketable securities	41	456	239	(415)	217
Net realized gains on other investments	83	74	49	9	25
Impairment losses on marketable securities and other investments	(75)	(177)	(172)	102	(5)
Equity in net losses of investees	(145)	(74)	(84)	(71)	10
Net gains (losses) on foreign currency transactions	37	(30)	—	67	(30)
Net (losses) gains on derivative instruments	(27)	32	(8)	(59)	40
	$ 539	$ 900	$ 635	$ (361)	$ 265

The increases in interest expense in fiscal 2018 and 2017 were primarily due to the issuance of an aggregate principal amount of $11.0 billion of unsecured floating- and fixed-rate notes in May 2017 (May 2017 Notes), of which $4.0 billion were repaid between May and August 2018, and fees related to the Bridge and Term Loan Facilities entered into during the first quarter of fiscal 2017, which terminated in July 2018. In the first quarter of fiscal 2017, we began divesting a substantial portion of our marketable securities portfolio in order to finance, in part, the then proposed acquisition of NXP. As a result, we recorded net realized gains and impairment losses on such marketable securities that we sold and expected to sell before their anticipated recovery, respectively, in fiscal 2017. The net gains on foreign currency transactions in fiscal 2018, which were partially offset by losses on derivative instruments, were primarily attributable to currency exchange rate movements on amounts accrued for the EC and TFTC fines, as well as the impact of currency exchange rate movements on certain monetary assets and liabilities of our RF360 Holdings joint venture.

Income Tax Expense (in millions)

2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change

Income tax expense	$ 5,377	$ 555	$ 1,131	$ 4,822	$ (576)
Effective tax rate	N/M	18 %	17 %		

N/M - Not meaningful

The following table summarizes the primary factors that caused our annual tax provision to differ from the expected income tax provision at the United States federal statutory rate (in millions):

	2018	2017	2016
Expected income tax provision at federal statutory tax rate	$ 127	$ 1,057	$ 2,392
State income tax provision, net of federal benefit	2	8	19
Toll Charge from U.S. tax reform	5,236	—	—
Benefits from foreign income taxed at other than U.S. rates	(834)	(963)	(1,068)
Valuation allowance on deferred tax asset related to NXP termination fee	494	—	—
Remeasurement of deferred taxes due to changes in statutory rate due to U.S. tax reform	438	—	—
Benefits related to research and development tax credits	(136)	(81)	(143)
Nondeductible charges and reversals related to the EC, KFTC and TFTC investigations	(119)	363	—
Taxes on undistributed foreign earnings	87	—	—
Impact of changes in tax reserves and audit settlements for prior year tax positions	—	111	—
Worthless stock deduction of domestic subsidiary	—	—	(101)
Other	82	60	32
Income tax expense	$ 5,377	$ 555	$ 1,131

The Tax Cuts and Jobs Act (the Tax Legislation) in the United States enacted on December 22, 2017 significantly revised the United States corporate income tax by, among other things, lowering the corporate income tax rate to 21% effective January 1, 2018, implementing a modified territorial tax system and imposing a one-time repatriation tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (the Toll Charge). As a fiscal-year taxpayer, certain provisions of the Tax Legislation impacted us in fiscal 2018, including the change in the corporate income tax rate and the Toll Charge, while other provisions will be effective starting at the beginning of fiscal 2019, including the implementation of a modified territorial tax system. Accordingly, our federal statutory income tax rate for fiscal 2018 reflected a blended rate of approximately 25%.

As a result of the Tax Legislation, we recorded a charge of $5.7 billion to income tax expense in fiscal 2018, comprised of $5.2 billion related to the estimated Toll Charge and $438 million resulting from the remeasurement of U.S. deferred tax assets and liabilities that existed at the end of fiscal 2017 at a lower enacted corporate income tax rate, which included a $135 million tax benefit in fiscal 2018 related to the remeasurement of a U.S. deferred tax liability that was established as a result of a change in one of our positions due to Tax Legislation.

Income tax expense for fiscal 2018 was further negatively impacted by the charge recorded in the fourth quarter of fiscal 2018 related to the termination fee paid to NXP, which did not result in a tax benefit after the consideration of realizability of such loss. Fiscal 2018 and 2017 income tax expense was also impacted by the EC, KFTC and TFTC fines, and settlement with the TFTC, which are not deductible for tax purposes and portions of which were attributable to foreign jurisdictions and to the United States. These impacts were partially offset in fiscal 2018 and 2017 by lower U.S. revenues primarily related to decreased royalty revenues from Apple's contract manufacturers and, for fiscal 2017, the BlackBerry arbitration.

Income tax expense for fiscal 2017 also reflected the increase in our Singapore tax rate as a result of the expiration of certain of our tax incentives in March 2017, which was substantially offset by tax benefits resulting from the increase in our Singapore tax rate that will be in effect when certain deferred tax assets are scheduled to reverse. During the third quarter of fiscal 2018, we entered into a new tax incentive agreement in Singapore that results in a reduced tax rate from March 2017 through March 2022, provided that we meet specified employment and investment criteria in Singapore. Our Singapore tax rate will increase in March 2022 as a result of expiration of these incentives and again in March 2027 upon the expiration of tax incentives under a prior agreement. As a result of this new tax incentive, our income tax expense for fiscal 2018 was reduced by approximately $130 million.

Unrecognized tax benefits were $217 million and $372 million at September 30, 2018 and September 24, 2017, respectively. The decrease in unrecognized tax benefits in fiscal 2018 was primarily due to an agreement with the IRS related to tax positions on the classification of income in our fiscal 2016 federal income tax return. We believe that it is reasonably possible that the total amounts of unrecognized tax benefits at September 30, 2018 may increase or decrease in the next 12 months.

As a result of the Tax Legislation, in fiscal 2019, several of our foreign subsidiaries will make tax elections to be treated as U.S. branches for federal income tax purposes (commonly referred to as "check-the-box" elections) effective beginning in fiscal 2018 and 2019. We believe that, by these foreign subsidiaries being treated as U.S. branches for federal income taxes, rather than controlled foreign corporations, we will significantly reduce the risk of being subject to GILTI (global intangible low-taxed income) and BEAT (base-erosion anti-abuse tax) taxes, both of which are effective for us starting in fiscal 2019. As a result of making these check-the-box elections in the first quarter of fiscal 2019, we expect to record an estimated tax benefit of $525 million to $575 million due to establishing new U.S. net deferred tax assets resulting from the difference between the GAAP basis and the U.S. federal tax carryover basis of the existing assets and liabilities of those foreign subsidiaries, primarily related to customer incentive liabilities that have not been deducted for tax purposes.

We are subject to income taxes in the United States and numerous foreign jurisdictions and are currently under examination by various tax authorities worldwide, most notably in countries where we earn a routine return and tax authorities believe substantial value-add activities are performed. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. As of September 30, 2018, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Segment Results

The following should be read in conjunction with the fiscal 2018, 2017 and 2016 results of operations for each reportable segment included in this Annual Report in "Notes to Consolidated Financial Statements, Note 8. Segment Information."

QCT Segment

(in millions)	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change
Revenues					
Equipment and services	$ 17,060	$ 16,315	$ 15,183	$ 745	$ 1,132
Licensing	222	164	226	58	(62)
Total revenues	$ 17,282	$ 16,479	$ 15,409	$ 803	$ 1,070
EBT (1)	$ 2,966	$ 2,747	$ 1,812	$ 219	$ 935
EBT as a % of revenues	17%	17%	12%	—	5%

(1) Earnings (loss) before taxes.

Equipment and services revenues mostly relate to sales of Mobile Station Modem (MSM) and accompanying Radio Frequency (RF), Power Management (PM) and wireless connectivity integrated circuits. Approximately 855 million, 804 million and 842 million MSM integrated circuits were sold during fiscal 2018, 2017 and 2016, respectively.

2018 vs. 2017

The increase in QCT equipment and services revenues in fiscal 2018 was primarily due to:

- + $825 million in higher RFFE product revenues primarily related to revenues from our RF360 Holdings joint venture, which was formed in the second quarter of fiscal 2017, and reflected the impact of eliminating a one-month reporting lag in fiscal 2018
- + $737 million in higher MSM and accompanying unit shipments primarily due to by higher demand from OEMs in China, partially offset by a decline in share at Apple
- - $719 million decrease due to lower average selling prices and unfavorable product mix
- - $83 million in lower connectivity product revenues

QCT EBT as a percentage of revenues remained flat in fiscal 2018 primarily due to an unchanged gross margin percentage, driven by the net effect of lower average selling prices and lower-margin product mix, offset by lower average unit costs.

QCT accounts receivable decreased by 25% in fiscal 2018 from $1.81 billion to $1.36 billion, primarily due to the timing of integrated circuit shipments. QCT inventories decreased by 17% in fiscal 2018 from $2.02 billion to $1.68 billion primarily due to a decrease in the overall quantity of units on hand.

2017 vs. 2016
The increase in QCT equipment and services revenues in fiscal 2017 was primarily due to:

- \+ $676 million in higher RFFE revenues, primarily related to revenues from our RF360 Holdings joint venture
- \+ $492 million increase due to higher shipments of connectivity products primarily related to adjacent industry segments outside of traditional cellular industries
- \+ $469 million increase due to the net impact of higher-priced product mix and lower average selling prices
- \- $553 million decrease primarily due to lower MSM and accompanying RF and PM unit shipments driven primarily by a decline in share at Apple, partially offset by higher demand from OEMs in China

QCT EBT as a percentage of revenues increased in fiscal 2017 primarily due to:

- \+ increase in gross margin percentage primarily driven by higher-margin product mix and lower average unit costs, partially offset by lower average selling prices and higher excess inventory charges
- \- a combined increase of 1% in research and development and selling, general and administrative expenses primarily related to our RF360 Holdings joint venture

QTL Segment

(in millions)	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change
Licensing revenues	$ 5,163	$ 6,445	$ 7,664	$ (1,282)	$ (1,219)
EBT	$ 3,525	$ 5,175	$ 6,528	$ (1,650)	$ (1,353)
EBT as a % of revenues	68 %	80 %	85 %	(12 %)	(5 %)

QTL results in fiscal 2018 and fiscal 2017 were negatively impacted by our continued dispute with Apple and its contract manufacturers (who are our licensees). We did not record any revenues in fiscal 2018 or the third or fourth quarter of fiscal 2017 for royalties due on sales of Apple's products. QTL revenues in fiscal 2018 included $600 million paid under an interim agreement with the other licensee in dispute. This represents a partial payment for royalties due after the second quarter of fiscal 2017 by that other licensee while negotiations continue, and it does not reflect the full amount of royalties due under the underlying license agreement. We did not record any revenues in the third or fourth quarter of fiscal 2017 for royalties due on the sales of the other licensee's products, and the other licensee underpaid royalties due in the second quarter of fiscal 2017, which negatively impacted QTL revenues by an estimated amount in excess of $150 million. Royalty revenues related to the products of Apple's contract manufacturers and the other licensee in dispute were approximately $1.7 billion in fiscal 2017. Revenues related to the products of Apple's contract manufacturers and the other licensee in dispute comprised a total of approximately $1.35 billion in the third and fourth quarters of fiscal 2016.

2018 vs. 2017
Excluding the impact of the aforementioned continued dispute with Apple and its contract manufacturers, as well as the dispute with the other licensee, QTL licensing revenues in fiscal 2018 further decreased primarily due to:

- \- $177 million in lower royalty revenues recognized related to devices sold in prior periods from certain other licensees

QTL EBT as a percentage of revenue decreased in fiscal 2018 primarily due to:

- \- higher selling, general and administrative expenses resulting primarily from higher litigation costs
- \- lower QTL revenues

QTL accounts receivable decreased by 15% in fiscal 2018 from $1.74 billion to $1.47 billion, primarily due to the timing of the collection of payments from certain of our licensees.

2017 vs. 2016
Excluding the impact of the aforementioned continued dispute with Apple and its contract manufacturers, as well as the with the other licensee, QTL licensing revenues in fiscal 2017 increased primarily due to:

- \+ higher royalty revenues recognized related to devices sold in prior periods
- \+ higher revenues per unit

- recognition of revenues in fiscal 2016 relating to the termination of an infrastructure license agreement resulting from the merger of two licensees
- lower recognition of unearned license fees

QTL EBT as a percentage of revenue decreased in fiscal 2017 primarily due to the decrease in QTL revenues.

QSI Segment

(in millions)	2018	2017	2016	2018 vs. 2017 Change	2017 vs. 2016 Change
Equipment and services revenues	$ 100	$ 113	$ 47	$ (13)	$ 66
EBT	$ 24	$ 65	$ 386	$ (41)	$ (321)

2018 vs. 2017

The decrease in QSI EBT in fiscal 2018 was primarily due to:

- \- $14 million decrease in net gains on investments
- \- $14 million increase in our share of losses in equity method investments
- \- $13 million decrease resulting from lower revenues from certain development contracts with one of our equity method investees

2017 vs. 2016

The decrease in QSI EBT in fiscal 2017 was primarily due to:

- \- $380 million gain recorded in fiscal 2016 from the sale of wireless spectrum
- \+ $41 million increase resulting from higher revenues and costs associated with certain development contracts with one of our equity method investees

Looking Forward

In the coming years, we expect continued growth in consumer demand for 3G/4G multi-mode and 4G products and services and new consumer demand for 5G products and services around the world, driven primarily by smartphones. We also expect growth in new device categories and industries, driven by the expanding adoption of certain technologies that are already commonly used in smartphones by industry segments outside traditional cellular industries, such as automotive, IoT and networking.

As we look forward to the next several months and beyond, we expect our business to be impacted by the following key items:

- In the second quarter of fiscal 2018, we announced a cost plan designed to align our cost structure to our long-term margin targets. As part of this plan, we continue to execute on a series of targeted actions across our businesses to reduce annual costs by $1 billion, excluding incremental costs resulting from any future acquisition of a business. We expect these cost reductions to be fully captured in fiscal 2019. In connection with this plan, we expect to incur additional restructuring and restructuring-related charges of up to $100 million, and we incurred $687 million in restructuring and restructuring-related charges in fiscal 2018.

- Regulatory authorities in certain jurisdictions continue to investigate our business practices, and other regulatory authorities may do so in the future. Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business with remedies that include, among others, injunctions, monetary damages or fines or other orders to pay money, and the issuance of orders to cease certain conduct and/or modify our business practices. Additionally, certain of our direct and indirect customers and licensees, including Apple, have pursued, and others may in the future pursue, litigation or arbitration against us related to our business. Unfavorable resolutions of one or more of these matters have in the past had a material adverse effect on our business and could in the future have a material adverse effect on our business including, among others, monetary damages, the loss of our ability to enforce one or more of our patents, and/or portions of our license agreements could be determined to be invalid or unenforceable. These activities have required, and we expect that they will continue to require, the investment of significant management time and attention and have resulted, and we expect that they will continue to result, in increased legal costs until the respective matters are resolved. See “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies” and “Risk Factors” included in this Annual Report.

- We are currently in dispute with Apple surrounding what we believe is an attempt by Apple to reduce the amount of royalties that its contract manufacturers (who are our licensees) are required to pay to us for use of our intellectual property. In fiscal 2018, such contract manufacturers did not fully report, and did not pay, royalties due on sales of Apple products. We have taken action against Apple's contract manufacturers to compel them to pay the required royalties, and against Apple, as described more fully in this Annual Report in "Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies." We did not record any revenues in fiscal 2018 or in the third and fourth quarters of fiscal 2017 for royalties due on sales of Apple's products, and as a result, QTL revenues and EBT were negatively impacted by these continued disputes. We expect these companies will continue to take such actions in the future, resulting in increased legal costs and negatively impacting our future revenues, as well as our financial condition, results of operations and cash flows until the respective disputes are resolved. In the third quarter of fiscal 2018, we entered into an interim agreement with the other licensee in dispute in which that licensee agreed to pay $700 million as partial payment for royalties due after the second quarter of fiscal 2017. That licensee paid $600 million in fiscal 2018 as a partial payment while negotiations continue. This payment does not reflect the full amount of royalties due under the underlying license agreement. If we do not reach a final agreement with that other licensee, it may not make any other payments or may not make full payments under the underlying license agreement, which may result in increased legal costs, due to exercising the dispute resolution provision in the license agreement, and will negatively impact our future revenues, as well as our financial condition, results of operations and cash flows until the dispute is resolved.

- To position QTL for stability on a long-term basis, we have announced that our cellular standard-essential patent only licensing terms, including 3G, 4G and 5G through Release 15 for both single mode and multi-mode devices worldwide, will remain at the same rate, consistent with our licensing program established in China for 3G and 4G devices. A number of our licensees have entered into cellular standard-essential patent only agreements on a worldwide basis, and we expect more of our licensees may enter into such cellular standard-essential patent only agreements in the future. In addition, in fiscal 2018, we have reduced the per unit royalty cap on smartphones, which is the base on which our royalties are calculated. While we expect these developments to enhance stability for the long term, they will negatively impact QTL royalty revenues.

- We expect our business, particularly QCT, to continue to be impacted by industry dynamics, including:

    - Concentration of device share among a few companies within the premium tier, resulting in significant supply chain leverage for those companies, and exacerbating the negative impact to our business and financial results if any of those companies do not utilize our chipsets;

    - Decisions by companies to utilize their own internally-developed integrated circuit products and/or sell such products to others, including by bundling with other products, increasing competition;

    - Decisions by certain companies to utilize our competitors' integrated circuit products in all or a portion of their devices. For example, we have not been the sole supplier of modems for iPhone products beginning with products that launched in September 2016, as Apple utilizes modems from one or more of our competitors in a portion of such devices. Apple is solely using one or more of our competitors' modems, rather than our modems, in its 2018 iPhone release and may take similar actions in the future. Accordingly, QCT revenues from modem sales for iPhones have declined in fiscal 2018, are expected to further decline in fiscal 2019 and may fluctuate in the future, in part depending on the extent of Apple's utilization of competitors' modems and the mix of the various versions of its products that are sold. Overall, QCT revenues, as well as profitability, may similarly decline unless offset by sales of integrated circuit products to other customers, including those outside of traditional cellular industries, such as the IoT, automotive and networking. Apple's sourcing of integrated circuit products does not impact our licensing revenues since our licensing revenues from Apple products are not dependent upon whether such products include our chipsets;

    - Intense competition, particularly in China, as our competitors expand their product offerings and/or reduce the prices of their products as part of a strategy to attract new and/or retain existing customers;

    - Continued growth of device share by Chinese OEMs in China and in regions outside of China;

    - Lengthening replacement cycles in developed regions, where the smartphone industry is mature, premium-tier smartphones are common and consumer demand is increasingly driven by new product launches and/or innovation cycles;

    - Lengthening replacement cycles in emerging regions as smartphone penetration increases; and

    -

Increasing consumer demand for 3G/4G smartphone products in emerging regions driven by availability of lower-tier 3G/4G devices.

- Current U.S./China trade relations may negatively impact our business, growth prospects and results of operations.

- We expect the ongoing rollout of 4G services in emerging regions will encourage competition and growth, bringing the benefits of 3G/4G LTE multi-mode to consumers.

- We continue to invest significant resources to develop our wireless baseband chips, and our converged computing/communications (Snapdragon) chipsets, which incorporate technologies in the following areas, among others: advancements in 4G and 5G, OFDM-based Wi-Fi, RFFE, connectivity, power management, graphics, audio and video codecs, multimedia, artificial intelligence (AI) and virtual/augmented reality, and all of which contribute to the expansion of our intellectual property portfolio. We are also investing in targeted opportunities that leverage our existing technical and business expertise to deploy new business models and enter and/or expand into new industry segments and applications, such as products for automotive, IoT (including the connected home, smart cities, wearables, voice and music and robotics), networking, computing and AI, such as machine learning, among others.

- We expect initial commercial 5G network deployments and device launches to begin in calendar 2019. We believe that 5G technologies will empower a new era of smartphones and connected devices. We also believe that 5G will drive transformation across industries beyond traditional cellular communications that will create new business models and new services. We believe it is important that we remain a leader in 5G technology development, standardization, intellectual property creation and licensing of 5G technologies, and to be a leading developer and supplier of 5G integrated circuit products and services in order to sustain and grow our business long term.

In addition to the foregoing business and market-based matters, we continue to devote resources to working with and educating participants in the wireless value chain and governments as to the benefits of our licensing program and our extensive technology investments in promoting a highly competitive and innovative wireless industry. However, we expect that certain companies may continue to be dissatisfied with the need to pay reasonable royalties for the use of our technology and not welcome the success of our licensing program in enabling new, highly cost-effective competitors to their products. We expect that such companies, and/or governments or regulators, will continue to challenge our business model in various forums throughout the world.

Further discussion of risks related to our business is presented in "Part I, Item 1A. Risk Factors" included in this Annual Report.

Liquidity and Capital Resources

Our principal sources of liquidity are our existing cash, cash equivalents and marketable securities, cash generated from operations, cash provided by our debt programs and proceeds from the issuance of common stock under our stock option and employee stock purchase plans. The following table presents selected financial information related to our liquidity as of and for the years ended September 30, 2018 and September 24, 2017 (in millions):

	2018	2017	$ Change	% Change
Cash, cash equivalents and marketable securities	$ 12,123	$ 38,578	$ (26,455)	(69%)
Accounts receivable, net	2,904	3,632	(728)	(20%)
Inventories	1,693	2,035	(342)	(17%)
Short-term debt	1,005	2,495	(1,490)	(60%)
Long-term debt	15,365	19,398	(4,033)	(21%)
Net cash provided by operating activities	3,895	5,001	(1,106)	(22%)
Net cash provided by investing activities	4,381	18,463	(14,082)	(76%)
Net cash (used) provided by financing activities	(31,487)	5,571	(37,058)	N/M

N/M = Not meaningful

The net decrease in cash, cash equivalents and marketable securities was primarily due to $22.6 billion in payments to repurchase shares of our common stock, $5.5 billion in repayment of long-term debt, $3.5 billion in cash dividends paid and $784 million in capital expenditures, partially offset by net cash provided by operating activities and the release of the restriction on $2.0 billion of deposits used to collateralize the letters of credit related to our proposed acquisition of NXP upon termination of the letters of credit. Net cash provided by operating activities decreased primarily due to the $2.0 billion termination fee paid to NXP and the continued actions taken by Apple and its contract manufacturers who did not report or pay royalties due in fiscal 2018, partially offset by the effect of the $940 million payment in connection with the BlackBerry arbitration in fiscal 2017 and the $927 million payment of the fine related to the KFTC investigation in fiscal 2017.

Our days sales outstanding, on a consolidated basis, decreased to 49 days at September 30, 2018 compared to 56 days at September 24, 2017. The decrease in accounts receivable and the related days sales outstanding were primarily due to the timing of integrated circuit shipments and the collection of receivables from certain licensees. The decrease in inventories was primarily due to a decrease in the overall quantity of units on hand.

Debt. Our 2016 Amended and Restated Revolving Credit Facility provides for unsecured revolving facility loans, swing line loans and letters of credit in the aggregate amount of $5.0 billion, of which $530 million and $4.47 billion will expire in February 2020 and November 2021, respectively. At September 30, 2018, no amounts were outstanding under the revolving credit facility.

We have an unsecured commercial paper program, which provides for the issuance of up to $5.0 billion of commercial paper. Net proceeds from this program are used for general corporate purposes. At September 30, 2018, we had $1.0 billion of commercial paper outstanding with weighted-average net interest rates of 2.35% and weighted-average remaining days to maturity of 16 days.

In July 2018, as a result of our termination of the NXP acquisition, the 2018 Revolving Credit Facility, 2016 Term Loan Facility and 2018 Term Loan Facility that were established primarily to fund the proposed acquisition of NXP were terminated in accordance with their terms. We had not borrowed any funds under these facilities. In addition, upon our payment of the NXP termination fee, the four letters of credit for which we had deposited aggregate funds of $2.0 billion as collateral for the potential termination fee payable to NXP were terminated, and we were no longer restricted from using the funds.

In May 2017, we issued an aggregate principal amount of $11.0 billion in nine tranches of unsecured floating- and fixed-rate notes, with maturity dates starting in 2019 through 2047. Effective interest rates were between 2.70% and 4.47% at September 30, 2018. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes.

In May 2018, we initiated private offerings to exchange and repurchase certain of our notes issued in May 2017 that were subject to special mandatory redemption provisions that required redemption on the first to occur of (i) the termination of the NXP purchase agreement or (ii) June 1, 2018 if the NXP transaction had not closed as of such date. We exchanged $122 million of notes and repurchased $71 million of notes in the aggregate. In July 2018, we repurchased $3.8 billion of notes subject to the special mandatory redemption provisions that were not exchanged in the May 2018 private offerings. In August 2018, subsequent to the termination of the NXP purchase agreement, we repurchased the $122 million of new notes issued in May 2018.

In May 2015, we issued an aggregate principal amount of $10.0 billion in eight tranches of unsecured floating- and fixed-rate notes, of which $8.5 billion remains outstanding with maturity dates in 2020 through 2045. Effective interest rates were between 2.93% and 4.73% at September 30, 2018. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes.

We may issue additional debt in the future. The amount and timing of such additional debt will be subject to a number of factors, including the cash flow generated by our operations, acquisitions and strategic investments, acceptable interest rates and changes in corporate income tax law, among other factors.

Additional information regarding our outstanding debt at September 30, 2018 is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 6. Debt."

Income Taxes. The Tax Legislation, which was signed into law during the first quarter of fiscal 2018, resulted in an estimated $5.2 billion charge related to the Toll Charge. We currently estimate that we will pay $2.5 billion for the Toll Charge after application of certain tax credits, which is payable in installments over eight years (8% in each of the first five years, 15% in year six, 20% in year seven and 25% in year eight) beginning on January 15, 2019. This amount may be reduced by excess tax benefits generated in fiscal 2019.

We have historically asserted our intention to indefinitely reinvest the operating earnings of certain non-U.S. subsidiaries outside the United States based on our plans for use and/or investment outside of the United States and our belief that our sources of cash and liquidity in the United States would be sufficient to meet future domestic cash needs. The Tax Legislation eliminated certain material tax effects on the repatriation of cash to the United States. Future repatriation of cash and other property held by our foreign subsidiaries will generally not be subject to U.S. federal income tax. As a result, we reevaluated our historic assertion, and as of September 30, 2018, we no longer consider substantially all of our foreign earnings to be indefinitely reinvested in our foreign subsidiaries.

Additional information regarding our income taxes is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 3. Income Taxes."

Capital Return Program. The following table summarizes stock repurchases, before commissions, and dividends paid during fiscal 2018, 2017 and 2016 (in millions, except per-share amounts):

	Stock Repurchase Program			Dividends		Total
	Shares	**Average Price Paid Per Share (1)**	**Amount**	**Per Share**	**Amount**	**Amount**
2018	278.8	$ 65.41	$ 22,569	$ 2.38	$ 3,466	$ 26,035
2017	22.8	58.87	1,342	2.20	3,252	4,594
2016	73.8	53.16	3,922	2.02	2,990	6,912

(1) Average Price Paid Per Share in fiscal 2018 excludes the impact of the three accelerated share repurchase agreements executed in September 2018 as the final number of shares and average purchase price will be determined at the end of the applicable purchase periods.

In the fourth quarter of fiscal 2018, following the termination of the agreement to acquire NXP, we announced a stock repurchase program authorizing us to repurchase up to $30.0 billion of our common stock, the large majority of which we expect to complete by the end of fiscal 2019. This replaced the existing $10.0 billion stock repurchase authorization announced on May 9, 2018. In August 2018, we completed a “modified Dutch auction” tender offer and paid an aggregate of $5.1 billion, excluding fees and related expenses, to repurchase 76.2 million shares of our common stock. In September 2018, we entered into three accelerated share repurchase agreements (ASR Agreements) to repurchase an aggregate of $16.0 billion of our common stock. During the fourth quarter of fiscal 2018, 178.4 million shares were initially delivered to us under the ASR Agreements and were retired. Pursuant to the terms of the ASR Agreements, the final number of shares and the average purchase price will be determined at the end of the applicable purchase periods, which are scheduled to occur in August 2019 but may occur earlier in certain circumstances. At September 30, 2018, $8.9 billion remained authorized for repurchase under our stock repurchase program. Since September 30, 2018, we repurchased and retired 8.5 million shares of common stock for $542 million.

Our stock repurchase program has significantly reduced and will continue to reduce the amount of cash that we have available to fund our operations including research and development, working capital, capital expenditures, acquisitions, investments, dividends and other corporate purposes; and increases our exposure to adverse economic, market, industry and competitive conditions and developments, and other changes in our business and our industry. This stock repurchase program has no expiration date. However, we periodically evaluate repurchases as a means of returning capital to stockholders to determine when and if repurchases are in the best interests of our stockholders and may accelerate, suspend, delay or discontinue repurchases at any time.

On October 23, 2018, we announced a cash dividend of $0.62 per share on our common stock, payable on December 20, 2018 to stockholders of record as of the close of business on December 6, 2018. We intend to continue to use cash dividends as a means of returning capital to stockholders, subject to capital availability and our view that cash dividends are in the best interests of our stockholders, among other factors.

Additional Capital Requirements. We believe our cash, cash equivalents and marketable securities, our expected cash flow generated from operations and our expected financing activities will satisfy our working and other capital requirements for at least the next 12 months based on our current business plans. Recent and expected working and other capital requirements, in addition to the above matters, also include the items described below.

- We expect the majority of the charges incurred in connection with our Cost Plan will result in cash payments. Our restructuring accrual was $83 million at September 30, 2018, and we expect to incur additional restructuring and restructuring-related charges of up to $100 million.

- Our purchase obligations at September 30, 2018, some of which relate to research and development activities and capital expenditures, totaled $3.7 billion and $630 million for fiscal 2019 and 2020, respectively, and $210 million thereafter.

- Our research and development expenditures were $5.6 billion in fiscal 2018 and $5.5 billion in fiscal 2017, and we expect to continue to invest heavily in research and development for new technologies, applications and services for voice and data communications.

- Cash outflows for capital expenditures were $784 million in fiscal 2018 and $690 million in fiscal 2017. We expect to continue to incur capital expenditures in the future to support our business, including research and development activities. Future capital expenditures may be impacted by transactions that are currently not forecasted.

- The EC imposed a fine on us, of which $1.2 billion was accrued at September 30, 2018 (based on the exchange rate at September 30, 2018, including related foreign currency gains and accrued interest). In the third quarter of 2018, we provided financial guarantees in lieu of cash payment to satisfy the obligation while we appeal the EU's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding.

- In August 2019, we have the option to acquire (and the minority owner has the option to sell) the minority ownership interest in the RF360 Holdings joint venture for $1.15 billion. The accreted value of such amount was included in other current liabilities at September 30, 2018.

- We expect to continue making strategic investments and acquisitions, the amounts of which could vary significantly, to open new opportunities for our technologies, obtain development resources, grow our patent portfolio or pursue new businesses.

Contractual Obligations/Off-Balance Sheet Arrangements

We have no significant contractual obligations not fully recorded on our consolidated balance sheets or fully disclosed in the notes to our consolidated financial statements. We have no material off-balance sheet arrangements as defined in Regulation S-K 303(a)(4)(ii).

The following table summarizes the payments due by fiscal period for our outstanding contractual obligations at September 30, 2018 (in millions):

	Total	2019	2020-2021	2022-2023	Beyond 2023	No Expiration Date
Purchase obligations (1)	$ 4,513	$ 3,673	$ 794	$ 45	$ 1	$ —
Operating lease obligations	413	117	169	84	43	—
Capital lease obligations (2)	31	14	16	1	—	—
Equity funding and financing commitments (3)	316	35	75	8	—	198
Long-term debt (4)	15,500	—	2,000	4,000	9,500	—
Other long-term liabilities (5)(6)	3,318	337	560	225	1,708	488
Total contractual obligations	$ 24,091	$ 4,176	$ 3,614	$ 4,363	$ 11,252	$ 686

(1) Total purchase obligations included commitments to purchase integrated circuit product inventories of $2.6 billion, $322 million, $62 million and $24 million for each of the four years from fiscal 2019 through 2022, respectively; there were no such purchase commitments thereafter. Integrated circuit product inventory obligations represent purchase commitments for raw materials, semiconductor die, finished goods and manufacturing services, such as wafer bump, probe, assembly and final test. Under our manufacturing relationships with our foundry suppliers and assembly and test service providers, cancelation of outstanding purchase commitments is generally allowed but requires payment of costs incurred through the date of cancelation, and in some cases, incremental fees related to capacity underutilization.

(2) Amounts represent future minimum lease payments including interest payments. Capital lease obligations were included in other current liabilities and other noncurrent liabilities in the consolidated balance sheet at September 30, 2018. The future lease payments related to our RF360 Holdings joint venture manufacturing facility under construction (Note 7) have not been presented in the table above as the lease term will commence upon completion of the construction project.

(3) Certain of these commitments do not have fixed funding dates and are subject to certain conditions and have, therefore, been presented as having no expiration date. Commitments represent the maximum amounts to be funded under these arrangements; actual funding may be in lesser amounts or not at all.

(4) The amounts noted herein represent contractual payments of principal only.

(5) Certain long-term liabilities reflected on our balance sheet, such as unearned revenues, are not presented in this table because they do not require cash settlement in the future. Other long-term liabilities as presented in this table include the related current portions, as applicable.

(6) Our consolidated balance sheet at September 30, 2018 included $123 million in other noncurrent liabilities for uncertain tax positions, some of which may result in cash payment. The future payments related to uncertain tax positions recorded as other noncurrent liabilities have not been presented in the table above due to the uncertainty of the amounts and timing of cash settlement with the taxing authorities.

Additional information regarding our financial commitments at September 30, 2018 is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 3. Income Taxes," "Note 6. Debt" and "Note 7. Commitments and Contingencies."

Critical Accounting Estimates

The preparation of our consolidated financial statements in accordance with accounting principles generally accepted in the United States requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and disclosure of contingent assets and liabilities. We base our estimates on historical and anticipated results and trends and on various other assumptions that we believe are reasonable under the circumstances, including assumptions as to future events. By their nature, estimates are subject to an inherent degree of uncertainty. Although we believe that our estimates and the assumptions supporting our assessments are reasonable, actual results that differ from our estimates could be material to our consolidated financial statements. A summary of our significant accounting policies is included in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies." We consider the following accounting estimates to be critical in the preparation of our consolidated financial statements.

Impairment of Other Investments. We hold investments in non-marketable equity instruments in privately held companies that are accounted for using either the cost or the equity method. Many of these investments are in early-stage companies, which are inherently risky because the markets for the technologies or products of these companies are uncertain and may never develop. We monitor our investments for events or circumstances that could indicate the investments are impaired, such as a deterioration in the investee's financial condition and business forecasts and lower valuations in recently completed or proposed financings, and we record impairment losses in earnings when we believe an investment has experienced a decline in value that is other than temporary.

Valuation of Inventories. Inventories are valued at the lower of cost and net realizable value using the first-in, first-out method. Recoverability of inventories is assessed based on review of future customer demand that considers multiple factors, including committed purchase orders from customers as well as purchase commitment projections provided by customers, among other things. This valuation also requires us to make judgments and assumptions based on information currently available about market conditions, including competition, product pricing, product life cycle and development plans. As we move to smaller geometry process technologies, the manufacturing lead-time increases, resulting in an increased reliance on our own forecasts of customer demand, rather than our customers' forecasts. If we overestimate demand for our products, the amount of our loss will be impacted by our contractual ability to reduce inventory purchases from our suppliers. Our assumptions of future product demand are inherently uncertain, and changes in our estimates and assumptions may cause us to realize material write-downs in the future.

Valuation of Goodwill and Other Indefinite-Lived and Long-Lived Assets. Our business combinations typically result in the recording of goodwill, other intangible assets and/or property, plant and equipment, and the recorded values of those assets may become impaired in the future. We also acquire intangible assets and property, plant and equipment in other types of transactions. The determination of the recorded value of intangible assets acquired in a business combination requires management to make estimates and assumptions that affect our consolidated financial statements. For intangible assets acquired in a non-monetary exchange, the estimated fair values of the assets transferred (or the estimated fair values of the assets received, if more clearly evident) are used to establish their recorded values, unless the values of neither the assets received nor the assets transferred are determinable within reasonable limits, in which case the assets received are measured based on the carrying values of the assets transferred. Valuation techniques consistent with the market approach, income approach and/or cost approach are used to measure fair value. An estimate of fair value can be affected by many assumptions that require significant judgment. For example, the income approach generally requires us to use assumptions to estimate future cash flows including those related to total addressable market, pricing and share forecasts, competition, technology obsolescence, future tax rates and discount rates. Our estimate of the fair value of certain assets may differ materially from that determined by others who use different assumptions or utilize different business models and from the future cash flows actually realized.

Goodwill and other indefinite-lived intangible assets are tested annually for impairment and in interim periods if events or changes in circumstances indicate that the assets may be impaired. Long-lived assets, such as property, plant and equipment and intangible assets subject to amortization, are reviewed for impairment when events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Our judgments regarding the existence of impairment indicators and future cash flows related to goodwill and other indefinite-lived intangible assets and long-lived assets may be based on operational performance of our businesses, market conditions, expected selling price and/or other factors. Although there are inherent uncertainties in this assessment process, the estimates and assumptions we use, including estimates of future cash flows and discount rates, are consistent with our internal planning, when appropriate. If these estimates or their related assumptions change in the future, we may be required to record an impairment charge on a portion or all of our goodwill, other indefinite-lived intangible assets and/or long-lived assets. Furthermore, we cannot predict the occurrence of future impairment-triggering events nor the impact such events might have on our reported asset values. Future events could cause us to conclude that impairment indicators exist, and that goodwill or other intangible assets associated with our acquired businesses are impaired. Any resulting impairment loss could have an adverse impact on our financial condition and results of operations. During fiscal 2018, 2017 and 2016, we recorded $273 million, $76 million and $107 million, respectively, in impairment charges for goodwill, other indefinite-lived intangible assets and long-lived assets. The estimated fair values of our QCT and QTL reporting units were substantially in excess of their respective carrying values at September 30, 2018.

Legal and Regulatory Proceedings. We are currently involved in certain legal and regulatory proceedings, and we intend to continue to vigorously defend ourselves. Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Investigations by antitrust and trade regulation agencies are not conducted in a consistent manner across jurisdictions. Further, each country and agency has different sets of laws, rules and regulations, both substantive and procedural, as well as different legal principles, theories and potential remedies, and some agencies may seek to use the investigation to advance domestic policy goals. Depending on the jurisdiction, these investigations can involve non-transparent procedures under which we may not receive access to evidence relied upon by the enforcement agency or that may be exculpatory and may not be informed of the specific legal theories or evidence considered or relied upon by the agency. Unlike in civil litigation in the United States, in foreign proceedings, we may not be entitled to discovery or depositions, allowed to cross-examine witnesses or confront our accusers. As a result, we may not be aware of, and may not be entitled to know, all allegations against us, or the information or documents provided to, or discovered or prepared by, the agency. Accordingly, we may have little or no idea what an agency's intent is with respect to liability, penalties or the timing of a decision. In many cases the agencies are given significant discretion, and any available precedent may have limited, if any, predictive value in their jurisdictions, much less in other jurisdictions. Accordingly, we cannot predict the outcome of these matters. However, the unfavorable resolution of one or more of these proceedings could have a material adverse effect on our business, results of operations, financial condition and/or cash flows. A broad range of remedies with respect to our business practices that are deemed to violate applicable laws are potentially available. These remedies may include, among others, injunctions, monetary damages or fines or other orders to pay money and the issuance of orders to cease certain conduct and/or to modify our business practices. If there is at least a reasonable possibility that a material loss may have been incurred associated with a loss contingency, we disclose such fact, and if reasonably estimable, we provide an estimate of the possible loss or range of possible loss. We record our best estimate of a loss related to pending legal or regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of loss can be reasonably estimated with no best estimate in the range, we record the minimum estimated liability. As additional information becomes available, we assess the potential liability, including the probability of loss related to pending legal or regulatory proceedings, and revise our estimates and update our disclosures accordingly. Significant judgment is required in both the determination of probability and the determination as to whether a loss is reasonably estimable. Revisions in our estimates of the potential liability could materially impact our results of operations.

Income Taxes. We are subject to income taxes in the United States and numerous foreign jurisdictions, and the assessment of our income tax positions involves dealing with uncertainties in the application of complex tax laws and regulations in various taxing jurisdictions. In addition, the application of tax laws and regulations is subject to legal and factual interpretation, judgment and uncertainty. Tax laws and regulations themselves are subject to change as a result of changes in fiscal policy, changes in legislation, the evolution of regulations and court rulings. Significant judgments and estimates are required in determining our provision for income taxes, including those related to tax incentives, intercompany research and development cost-sharing arrangements, transfer pricing and tax credits. While we believe we have appropriate support for the positions taken or plan to take on our tax returns, we regularly assess the potential outcomes of examinations by taxing authorities in determining the adequacy of our provision for income taxes. Therefore, the actual liability for U.S. or foreign taxes may be materially different from our estimates, which could result in the need to record additional tax liabilities or potentially reverse previously recorded tax liabilities. We are participating in the Internal Revenue Service (IRS) Compliance Assurance Process program whereby we endeavor to agree with the IRS on the treatment of all issues prior to filing our federal return. A benefit of participation in this program is that post-filing adjustments by the IRS are less likely to occur.

On December 22, 2017, tax reform legislation known as the Tax Cuts and Jobs Act (the Tax Legislation) was enacted in the U.S. The Tax Legislation significantly revises the U.S. corporate income tax by, among other things, lowering the corporate income tax rate to 21%, implementing a modified territorial tax system and imposing a one-time repatriation tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (the Toll Charge). As a fiscal-year taxpayer, we were impacted by certain provisions of the Tax Legislation in fiscal 2018, including the change in the corporate income tax rate and the Toll Charge, while other provisions will be effective starting at the beginning of fiscal 2019, including the implementation of a modified territorial tax system. Accounting for the income tax effects of the Tax Legislation requires significant judgments and estimates in the interpretation and calculations of the provisions of the Tax Legislation.

Given the amount and complexity of the changes in tax law resulting from the Tax Legislation, we have not finalized the accounting for the income tax effects of the Tax Legislation related to the Toll Charge. We have made reasonable estimates of the effects and recorded provisional amounts in our consolidated financial statements. The impact of the Tax Legislation related to the Toll Charge may differ from this estimate during the remainder of the one-year measurement period due to, among other things, further refinement of our calculations, changes in interpretations and assumptions we have made, guidance that may be issued and actions we may take as a result of the Tax Legislation. We are in the process of analyzing the effects of new taxes due on certain foreign income, such as GILTI (global intangible low-taxed income), BEAT (base-erosion anti-abuse tax) and FDII (foreign-derived intangible income), and limitations on interest expense deductions (if certain conditions apply), all of which are effective starting in fiscal 2019, as well as other provisions of the Tax Legislation.

Our QCT segment's non-U.S. headquarters is located in Singapore. During the third quarter of fiscal 2018, we entered into a new tax incentive agreement in Singapore that results in a reduced tax rate from March 2017 through March 2022, provided that we meet specified employment and investment criteria in Singapore. Our Singapore tax rate will increase in March 2022 as a result of expiration of these incentives and again in March 2027 upon the expiration of tax incentives under a prior agreement. As a result of this new tax incentive, our income tax expense for fiscal 2018 was reduced by approximately $130 million. Our failure to meet these criteria could adversely impact our provision for income taxes.

Recent Accounting Pronouncements

Information regarding recent accounting pronouncements and the impact of those pronouncements, if any, on our consolidated financial statements is provided in this Annual Report in "Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies."

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Marketable Securities

We have made investments in marketable equity securities of companies of varying size, style, industry and geography and changes in investment allocations may affect the price volatility of our investments. On October 27, 2016, we announced a definitive agreement under which Qualcomm River Holdings proposed to acquire NXP (the Purchase Agreement). We intended to use a substantial portion of our cash, cash equivalents and marketable securities to fund the NXP transaction. As a result, during fiscal 2017, we divested a substantial portion of our marketable securities portfolio, including our equity securities and fund shares. On July 26, 2018, we terminated the Purchase Agreement and announced that we had been authorized to repurchase up to $30 billion of our common stock. In August 2018, we completed a "modified Dutch auction" tender offer and paid an aggregate of $5.1 billion, excluding fees and related expenses, to repurchase 76.2 million shares of our common stock. In September 2018, we entered into three accelerated share repurchase agreements to repurchase an aggregate of $16.0 billion of our common stock. The actions taken pursuant to our stock repurchase program have significantly reduced the amount of cash available to fund our investments in marketable securities.

Equity Price Risk. The recorded values of our marketable equity securities increased to $167 million at September 30, 2018 from $36 million at September 24, 2017. A 10% decrease in the market price of our marketable equity securities at September 30, 2018 would have caused a decrease in the carrying amounts of these securities of $17 million. A 10% decrease in the market price of our marketable equity securities at September 24, 2017 would have caused a negligible decrease in the carrying amounts of these securities. At September 30, 2018, there were no gross unrealized losses of our marketable equity securities.

Interest Rate Risk. We invest a portion of our cash in a number of diversified fixed- and floating-rate securities consisting of cash equivalents, marketable debt securities, debt funds and time deposits that are subject to interest rate risk. Changes in the general level of interest rates can affect the fair value of our investment portfolio. If interest rates in the general economy were to rise, our holdings could lose value. As a result of divesting a substantial portion of our marketable securities portfolio and changes in portfolio allocation, the fair value of our investment portfolio is subject to lower interest rate risk. At September 30, 2018, a hypothetical increase in interest rates of 100 basis points across the entire yield curve on our holdings would have resulted in a negligible decrease in the fair value of our holdings. At September 24, 2017, a hypothetical increase in interest rates of 100 basis points across the entire yield curve on our holdings would have resulted in a decrease of $26 million in the fair value of our holdings.

Other Investments

Equity Price Risk. We hold investments in non-marketable equity instruments in privately held companies that may be impacted by equity price risks. Volatility in the equity markets could negatively affect our investees' ability to raise additional capital as well as our ability to realize value from our investments through initial public offerings, mergers and private sales.

Consequently, we could incur other-than-temporary impairment losses or realized losses on all or a part of the values of our non-marketable equity investments. At September 30, 2018 and September 24, 2017, the aggregate carrying value of our non-marketable equity investments was included in other noncurrent assets and was $1.1 billion and $982 million, respectively.

Debt and Interest Rate Swap Agreements

Interest Rate Risk. At September 30, 2018, we have an aggregate principal amount of $15.5 billion of unsecured floating- and fixed-rate notes with varying maturity dates. We have also entered into interest rate swaps with an aggregate notional amount of $1.8 billion to effectively convert certain fixed-rate interest payments into floating-rate payments. The interest rates on our floating-rate notes and interest rate swaps are based on LIBOR. At September 30, 2018, a hypothetical increase in LIBOR-based interest rates of 100 basis points would cause our interest expense to increase by $22 million on an annualized basis as it relates to our floating-rate notes and interest rate swap agreements. At September 24, 2017, a hypothetical increase in LIBOR-based interest rates of 100 basis points would have caused our interest expense to increase by $46 million on an annualized basis as it relates to our floating-rate notes and interest rate swap agreements.

Additionally, we have a commercial paper program that provides for the issuance of up to $5.0 billion of commercial paper. At September 30, 2018, we had $1.0 billion of commercial paper outstanding, with original maturities of less than three months. Changes in interest rates could affect the amounts of interest that we pay if we refinance the current outstanding commercial paper with new debt.

Additional information regarding our notes and related interest rate swap agreements and commercial paper program is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies” and “Notes to Consolidated Financial Statements, Note 6. Debt.”

Foreign Exchange Risk

We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative financial instruments, including foreign currency forward and option contracts with financial counterparties. We utilize such derivative financial instruments for hedging or risk management purposes rather than for speculative purposes. Counterparties to our derivative contracts are all major banking institutions. In the event of the financial insolvency or distress of a counterparty to our derivative financial instruments, we may be unable to settle transactions if the counterparty does not provide us with sufficient collateral to secure its net settlement obligations to us, which could have a negative impact on our results. A description of our foreign currency accounting policies is provided in this Annual Report in “Notes to Consolidated Financial Statements, Note 1. Significant Accounting Policies.”

At September 30, 2018, our net asset related to foreign currency options designated as hedges of foreign currency risk on royalties earned from certain licensees was negligible. If our forecasted royalty revenues for currencies in which we hedge were to decline by 20% and foreign exchange rates were to change unfavorably by 20% in our hedged foreign currency, we would not incur a loss as our hedge positions would continue to be fully effective.

At September 30, 2018, our net liability related to foreign currency option and forward contracts designated as hedges of foreign currency risk on certain operating expenditure transactions was $18 million. If our forecasted operating expenditures for currencies in which we hedge were to decline by 20% and foreign exchange rates were to change unfavorably by 20% in our hedged foreign currency, we would not incur a loss as our hedge positions would continue to be fully effective.

Financial assets and liabilities held by consolidated subsidiaries that are not denominated in the functional currency of those entities are subject to the effects of currency fluctuations and may affect reported earnings. As a global company, we face exposure to adverse movements in foreign currency exchange rates. We may hedge currency exposures associated with certain assets and liabilities denominated in nonfunctional currencies and certain anticipated nonfunctional currency transactions. As a result, we could experience unanticipated gains or losses on anticipated foreign currency cash flows, as well as economic loss with respect to the recoverability of investments. While we may hedge certain transactions with non-U.S. customers, declines in currency values in certain regions may, if not reversed, adversely affect future product sales because our products may become more expensive to purchase in the countries of the affected currencies.

At September 30, 2018, our net liability related to foreign currency option and forward contracts not designated as hedging instruments used to manage foreign currency risk on certain receivables and payables was negligible. If the foreign exchange rates were to change unfavorably by 20% in our hedged foreign currency, we would not incur a loss as the change in the fair value of the foreign currency option and forward contracts would be offset by the change in fair value of the related receivables and/or payables being economically hedged.

Our analysis methods used to assess and mitigate the risks discussed above should not be considered projections of future risks.

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements at September 30, 2018 and September 24, 2017 and for each of the three years in the period ended September 30, 2018 and the Report of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm, are included in this Annual Report on pages F-1 through F-49.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such terms are defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the Exchange Act). Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Annual Report.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under this framework, our management concluded that our internal control over financial reporting was effective as of September 30, 2018.

PricewaterhouseCoopers LLP, the independent registered public accounting firm that audited the consolidated financial statements included in this Annual Report, has also audited the effectiveness of our internal control over financial reporting as of September 30, 2018, as stated in its report which appears on pages F-1 through F-2 in this Annual Report.

Inherent Limitations over Internal Controls

Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that:

i. pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;

ii. provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

iii. provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the consolidated financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations, including the possibility of human error and circumvention by collusion or overriding of controls. Accordingly, even an effective internal control system may not prevent or detect material misstatements on a timely basis. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the fourth quarter of fiscal 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item regarding directors is incorporated by reference to our 2019 Proxy Statement under the headings “Nominees for Election” and “Section 16(a) Beneficial Ownership Reporting Compliance.” Certain information required by this item regarding executive officers is set forth in Item 1 of Part I of this Report under the caption “Executive Officers,” and certain information is incorporated by reference to the 2019 Proxy Statement under the heading “Section 16(a) Beneficial Ownership Reporting Compliance.” The information required by this item regarding corporate governance is incorporated by reference to the 2019 Proxy Statement under the headings “Code of Ethics and Corporate Governance Principles and Practices,” “Director Nominations” and “Board Meetings, Committees and Attendance.”

Item 11. Executive Compensation

The information required by this item is incorporated by reference to the 2019 Proxy Statement under the headings “Executive Compensation and Related Information,” “Compensation Tables and Narrative Disclosures,” “Director Compensation,” “Compensation Committee Interlocks and Insider Participation” and “Compensation Committee Report.”

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference to the 2019 Proxy Statement under the headings “Equity Compensation Plan Information” and “Stock Ownership of Certain Beneficial Owners and Management.”

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to the 2019 Proxy Statement under the headings “Certain Relationships and Related-Person Transactions” and “Director Independence.”

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to the 2019 Proxy Statement under the heading “Fees for Professional Services” and “Policy on Audit Committee Pre-Approval of Audit and Non-Audit Services of Independent Public Accountants.”

PART IV

Item 15. Exhibits and Financial Statement Schedules

The following documents are filed as part of this report:

(a) Financial Statements:

	Page Number
(1) Report of Independent Registered Public Accounting Firm	F-1
Consolidated Balance Sheets at September 30, 2018 and September 24, 2017	F-3
Consolidated Statements of Operations for Fiscal 2018, 2017 and 2016	F-4
Consolidated Statements of Comprehensive (Loss) Income for Fiscal 2018, 2017 and 2016	F-5
Consolidated Statements of Cash Flows for Fiscal 2018, 2017 and 2016	F-6

Financial statement schedules other than those listed above have been omitted because they are either not required, not applicable or the information is otherwise included in the notes to the consolidated financial statements.

(b) Exhibits

Exhibit Number	Exhibit Description	Form	File No./ Film No.	Date of First Filing	Exhibit Number	Filed Herewith
2.1	Master Transaction Agreement, dated January 13, 2016, by and among Qualcomm Global Trading Pte. Ltd., each other Purchaser Group member, TDK Japan, each other Seller Group member, and, solely for purposes of Section 10.9 thereof, QUALCOMM Incorporated. (1)	8-K	000-19528/ 161339867	1/13/2016	2.1	
2.2	Amendment #1, dated December 20, 2016, to Master Transaction Agreement, dated January 13, 2016, by and among Qualcomm Global Trading Pte. Ltd., each other Purchaser Group member, TDK Japan, each other Seller Group member, and, solely for purposes of Section 10.9 thereof, QUALCOMM Incorporated. (1)	10-Q	000-19528/ 17546539	1/25/2017	2.3	
2.3	Amendment #2, dated January 19, 2017, to Master Transaction Agreement, dated January 13, 2016, by and among Qualcomm Global Trading Pte. Ltd., each other Purchaser Group member, TDK Japan, each other Seller Group member, and, solely for purposes of Section 10.9 thereof, QUALCOMM Incorporated. (1)	10-Q	000-19528/ 17546539	1/25/2017	2.4	
2.4	Amendment #3, dated February 3, 2017, to Master Transaction Agreement, dated January 13, 2016, by and among Qualcomm Global Trading Pte. Ltd., each other Purchaser Group member, TDK Japan, each other Seller Group member, and, solely for purposes of Section 10.9 thereof, QUALCOMM Incorporated. (1)	10-Q	000-19528/ 17770305	4/19/2017	2.6	
2.5	Purchase Agreement dated as of October 27, 2016 by and between Qualcomm River Holdings, B.V. and NXP Semiconductors N.V. (1)	8-K	000-19528/ 161956228	10/27/2016	2.1	
2.6	Amendment No. 1, dated February 20, 2018, to Purchase Agreement, dated as of October 27, 2016, by and between Qualcomm River Holdings B.V. and NXP Semiconductors N.V. (1)	8-K	000-19528/ 18623109	2/20/2018	2.1	
2.7	Amendment No. 2, dated April 19, 2018, to Purchase Agreement, dated as of October 27, 2016, by and between Qualcomm River Holdings B.V. and NXP Semiconductors N.V., as amended by Amendment No. 1 to the Purchase Agreement, dated as of February 20, 2018, by and between Qualcomm River Holdings B.V. and NXP Semiconductors N.V. (1)	8-K	000-19528/ 18762502	4/19/2018	2.1	
3.1	Amended and Restated Certificate of Incorporation	8-K	000-19528/ 18766678	4/20/2018	3.1	
3.2	Amended and Restated Bylaws	8-K	000-19528/ 18957073	7/17/2018	3.1	
4.1	Indenture, dated May 20, 2015, between the Company and U.S. Bank National Association, as trustee.	8-K	000-19528/ 15880967	5/21/2015	4.1	
4.2	Officers' Certificate, dated May 20, 2015, for the Floating Rate Notes due 2018, the Floating Rate Notes due 2020, the 1.400% Notes due 2018, the 2.250% Notes due 2020, the 3.000% Notes due 2022, the 3.450% Notes due 2025, the 4.650% Notes due 2035 and the 4.800% Notes due 2045.	8-K	000-19528/ 15880967	5/21/2015	4.2	
4.3	Form of Floating Rate Notes due 2020.	8-K	000-19528/ 15880967	5/21/2015	4.4	
4.4	Form of 2.250% Notes due 2020.	8-K	000-19528/ 15880967	5/21/2015	4.6	
4.5	Form of 3.000% Notes due 2022.	8-K	000-19528/ 15880967	5/21/2015	4.7	
4.6	Form of 3.450% Notes due 2025.	8-K	000-19528/ 15880967	5/21/2015	4.8	
4.7	Form of 4.650% Notes due 2035.	8-K	000-19528/ 15880967	5/21/2015	4.9	

Exhibit Number	Exhibit Description	Form	File No./ Film No.	Date of First Filing	Exhibit Number	Filed Herewith
4.8	Form of 4.800% Notes due 2045.	8-K	000-19528/ 15880967	5/21/2015	4.10	
4.9	Officers' Certificate, dated May 26, 2017, for the Floating Rate Notes due 2019, the Floating Rate Notes due 2020, the Floating Rate Notes due 2023, the 1.850% Notes due 2019, the 2.100% Notes due 2020, the 2.600% Notes due 2023, the 2.900% Notes due 2024, the 3.250% Notes due 2027 and the 4.300% Notes due 2047.	8-K	000-19528/ 17882336	5/31/2017	4.2	
4.10	Form of Floating Rate Notes due 2023.	8-K	000-19528/ 17882336	5/31/2017	4.5	
4.11	Form of 2.600% Notes due 2023.	8-K	000-19528/ 17882336	5/31/2017	4.8	
4.12	Form of 2.900% Notes due 2024.	8-K	000-19528/ 17882336	5/31/2017	4.9	
4.13	Form of 3.250% Notes due 2027.	8-K	000-19528/ 17882336	5/31/2017	4.10	
4.14	Form of 4.300% Notes due 2047.	8-K	000-19528/ 17882336	5/31/2017	4.11	
10.1	Form of Indemnity Agreement between the Company and its directors and officers. (2)	10-K	000-19528/ 151197257	11/4/2015	10.1	
10.2	Form of Grant Notice and Stock Option Agreement under the 2006 Long-Term Incentive Plan. (2)	10-K	000-19528/ 091159213	11/5/2009	10.84	
10.3	Form of Grant Notices and Global Employee Restricted Stock Unit Agreement under the 2006 Long-Term Incentive Plan. (2)	10-K	000-19528/ 121186937	11/7/2012	10.105	
10.4	2006 Long-Term Incentive Plan, as amended and restated. (2)	10-Q	000-19528/ 13779468	4/24/2013	10.112	
10.5	Form of Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2006 Long-Term Incentive Plan for non-employee directors residing in the United States and Spain. (2)	10-K	000-19528/ 131196747	11/6/2013	10.119	
10.6	Form of Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreements under the 2006 Long-Term Incentive Plan, which includes a September 29, 2014 to March 29, 2015 performance period. (2)	10-Q	000-19528/ 14988939	7/23/2014	10.123	
10.7	Non-Qualified Deferred Compensation Plan, as amended, effective January 1, 2016. (2)	8-K	000-19528/ 151134109	9/30/2015	10.1	
10.8	Amendment to 2006 Long-Term Incentive Plan, as amended and restated. (2)	10-Q	000-19528/ 15555092	1/28/2015	10.126	
10.9	Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan, as amended. (2)	10-Q	000-19528/ 151000141	7/22/2015	10.128	
10.10	Revolving Credit Agreement among Qualcomm Incorporated, the lenders party thereto and Bank of America, N.A., as Administrative Agent, Swing Line Lender and Letter of Credit Issuer, dated as of February 18, 2015.	8-K	000-19528/ 15628813	2/18/2015	10.1	
10.11	Form of Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Grant Agreement under the 2006 Long-Term Incentive Plan, which includes a September 28, 2015 to September 28, 2018 performance period. (2)	10-K	000-19528/ 151197257	11/4/2015	10.28	
10.12	2016 Long-Term Incentive Plan. (2)	DEF 14A	000-19528/ 161353677	1/21/2016	Appendix 5	
10.13	Form of Executive Performance Stock Unit Award Grant Notice under the 2006 Long-Term Incentive Plan, which includes a March 28, 2016 to March 28, 2019 performance period. (2)	10-Q	000-19528/ 161581558	4/20/2016	10.31	

Exhibit Number	Exhibit Description	Form	File No./ Film No.	Date of First Filing	Exhibit Number	Filed Herewith
10.14	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in the United States. (2)	10-Q	000-19528/ 161581558	4/20/2016	10.32	
10.15	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in Spain. (2)	10-Q	000-19528/ 161581558	4/20/2016	10.33	
10.16	Form of Non-Employee Director Deferred Stock Unit Grant Notices and Non-Employee Director Deferred Stock Unit Agreements under the 2016 Long-Term Incentive Plan for non-employee directors residing in Singapore. (2)	10-Q	000-19528/ 161581558	4/20/2016	10.34	
10.17	Form of Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement under the 2016 Long-Term Incentive Plan. (2)	10-K	000-19528/ 161967933	11/2/2016	10.36	
10.18	Form of Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement under the 2016 Long-Term Incentive Plan. (2)	10-K	000-19528/ 161967933	11/2/2016	10.37	
10.19	Credit Agreement among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as Administrative Agent, dated as of November 8, 2016.	8-K	000-19528/ 161985209	11/9/2016	10.1	
10.20	Amended and Restated Credit Agreement among QUALCOMM Incorporated, the lenders party thereto and Bank of America, N.A., as Administrative Agent, dated as of November 8, 2016.	8-K	000-19528/ 161985209	11/9/2016	10.2	
10.21	Letter of Credit and Reimbursement Agreement between Qualcomm River Holdings B.V. and Mizuho Bank, Ltd., dated as of November 22, 2016.	8-K	000-19528/ 162023573	11/29/2016	10.1	
10.22	First Amendment to Letter of Credit and Reimbursement Agreement between Qualcomm River Holdings B.V. and Mizuho Bank, Ltd., dated as of November 23, 2016.	8-K	000-19528/ 162023573	11/29/2016	10.2	
10.23	Continuing Agreement for Standby Letters of Credit between Qualcomm River Holdings B.V. and The Bank of Tokyo-Mitsubishi UFJ, Ltd., dated as of November 22, 2016.	8-K	000-19528/ 162023573	11/29/2016	10.3	
10.24	Reimbursement and Security Agreement between Qualcomm River Holdings B.V. and Sumitomo Mitsui Banking Corporation, dated as of November 22, 2016.	8-K	000-19528/ 162023573	11/29/2016	10.4	
10.25	Letter of Credit Application by QUALCOMM Incorporated to Bank of America, N.A., dated as of November 23, 2016.	8-K	000-19528/ 162023573	11/29/2016	10.5	
10.26	Form of 2017 Annual Cash Incentive Plan Performance Unit Agreement (2)	10-Q	000-19528/ 17546539	1/25/2017	10.47	
10.27	Qualcomm Incorporated 2018 Director Compensation Plan. (2)	10-K	000-19528/ 171169046	11/1/2017	10.38	
10.28	Form of Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement under the 2016 Long-Term Incentive Plan, which includes a September 25, 2017 to March 25, 2018 performance period. (2)	10-K	000-19528/ 171169046	11/1/2017	10.39	
10.29	Form of Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement under the 2016 Long-Term Incentive Plan, which includes a September 25, 2017 to September 27, 2020 performance period. (2)	10-K	000-19528/ 171169046	11/1/2017	10.40	

Exhibit Number	Exhibit Description	Form	File No./ Film No.	Date of First Filing	Exhibit Number	Filed Herewith
10.30	Amendment to the Qualcomm Incorporated 2006 and 2016 Long-Term Incentive Plans, as amended and restated. (2)	8-K	000-19528/ 0171271241	12/22/2017	10.2	
10.31	Qualcomm Incorporated Non-Executive Officer Change in Control Severance Plan.	10-Q	000-19528/ 18562799	1/31/2018	10.42	
10.32	Form of 2018 Annual Cash Incentive Plan Performance Unit Agreement. (2)	10-Q	000-19528/ 18562799	1/31/2018	10.43	
10.33	Form of Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement under the 2016 Long-Term Incentive Plan (FY2017/ FY2018). (2)	10-Q	000-19528/ 18562799	1/31/2018	10.44	
10.34	Waiver and Consent No. 2, dated as of February 26, 2018, among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as administrative agent.	8-K	000-19528/ 18662702	3/2/2018	1.1	
10.35	Credit Agreement among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as administrative agent, dated as of March 6, 2018.	8-K	000-19528/ 18678483	3/9/2018	10.1	
10.36	Amendment No. 1, dated as of April 20, 2018, among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as administrative agent, to the Credit Agreement dated as of November 8, 2016, among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as administrative agent.	8-K	000-19528/ 18771694	4/24/2018	10.1	
10.37	Amendment No. 1, dated as April 20, 2018, among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as administrative agent, to the Credit Agreement dated as of March 6, 2018, among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as administrative agent.	8-K	000-19528/ 18771694	4/24/2018	10.2	
10.38	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V., Arrowgrass Master Fund Ltd. and Arrowgrass Customised Solutions I Limited.	8-K	000-19528/ 18623109	2/20/2018	10.1	
10.39	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V., D. E. Shaw Valence Portfolios, L.L.C., D. E. Shaw Kalon Portfolios, L.L.C., D. E. Shaw Orienteer Portfolios, L.L.C., D. E. Shaw Oculus Portfolios, L.L.C., D. E. Shaw Orienteer X Portfolios, L.L.C. and D. E. Shaw Asymptote Portfolios, L.L.C.	8-K	000-19528/ 18623109	2/20/2018	10.2	
10.40	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V., Davidson Kempner International Ltd., Davidson Kempner Institutional Partners, L.P., Davidson Kempner Partners and M.H. Davidson & Co.	8-K	000-19528/ 18623109	2/20/2018	10.3	
10.41	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V., Elliott Associates, L.P., Elliott Associates International, L.P. and Elliott International Capital Advisors Inc.	8-K	000-19528/ 18623109	2/20/2018	10.4	
10.42	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V., Farallon Capital Partners, L.P., Farallon Capital Institutional Partners, L.P., Farallon Capital Institutional Partners V, L.P., Farallon Capital Institutional Partners II, L.P., Farallon Capital Offshore Investors II, L.P., Farallon Capital F5 Master I, L.P., Farallon Capital (AM) Investors, L.P. and Farallon Capital Institutional Partners III, L.P.	8-K	000-19528/ 18623109	2/20/2018	10.5	

Exhibit Number	Exhibit Description	Form	File No./ Film No.	Date of First Filing	Exhibit Number	Filed Herewith
10.43	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V., HBK Master Fund L.P. and HBK Merger Strategies Master Fund L.P.	8-K	000-19528/ 18623109	2/20/2018	10.6	
10.44	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V. and Pentwater Capital Management LP.	8-K	000-19528/ 18623109	2/20/2018	10.7	
10.45	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V., Soroban Master Fund LP and Soroban Opportunities Master Fund LP.	8-K	000-19528/ 18623109	2/20/2018	10.8	
10.46	Tender and Support Agreement, dated as of February 20, 2018, by and among Qualcomm River Holdings B.V. and TIG Advisors, LLC.	8-K	000-19528/ 18623109	2/20/2018	10.9	
10.47	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement for Non-Employee Directors in Singapore. (2)	10-Q	000-19528/ 18774411	4/25/2018	10.58	
10.48	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement for Non-Employee Directors in Spain. (2)	10-Q	000-19528/ 18774411	4/25/2018	10.59	
10.49	Form of 2016 Long-Term Incentive Plan Non-Employee Director Deferred Stock Unit Grant Notice and Non-Employee Director Deferred Stock Unit Agreement. (2)	10-Q	000-19528/ 18774411	4/25/2018	10.60	
10.50	Qualcomm Incorporated Amended and Restated 2018 Director Compensation Plan. (2)	10-Q	000-19528/ 18774411	4/25/2018	10.61	
10.51	Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan, as amended. (2)	10-Q	000-19528/ 18774411	4/25/2018	10.62	
10.52	Qualcomm Incorporated Executive Officer Change in Control Severance Plan	8-K	000-19528/ 18859830	5/25/2018	10.1	
10.53	Amendment No. 2, dated as of June 11, 2018, among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as administrative agent, to the Credit Agreement dated as of March 6, 2018, among QUALCOMM Incorporated, the lenders party thereto and Goldman Sachs Bank USA, as administrative agent.	8-K	000-19528/ 18896982	6/13/2018	10.1	
10.54	Master Confirmation — Accelerated Stock Buyback, dated as of September 12, 2018, between QUALCOMM Incorporated and Bank of America, N.A.	8-K	000-19528/ 181067919	9/13/2018	10.1	
10.55	Master Confirmation — Accelerated Stock Buyback, dated as of September 12, 2018, between QUALCOMM Incorporated and Citibank, N.A.	8-K	000-19528/ 181067919	9/13/2018	10.2	
10.56	Master Confirmation — Accelerated Stock Buyback, dated as of September 12, 2018, between QUALCOMM Incorporated and Morgan Stanley & Co. LLC	8-K	000-19528/ 181067919	9/13/2018	10.3	
10.57	Qualcomm Incorporated Executive Officer Severance Plan	8-K	000-19528/ 181082096	9/21/2018	10.1	
10.58	Qualcomm Incorporated 2019 Director Compensation Plan					X
10.59	Qualcomm Incorporated 2016 Long-Term Incentive Plan CEO Performance Stock Option Grant Notice and CEO Performance Stock Option Agreement					X

Exhibit Number	Exhibit Description	Form	File No./ Film No.	Date of First Filing	Exhibit Number	Filed Herewith
10.60	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Performance Stock Unit Award Grant Notice and Executive Performance Stock Unit Award Agreement					X
10.61	Form of Qualcomm Incorporated 2016 Long-Term Incentive Plan Executive Restricted Stock Unit Grant Notice and Executive Restricted Stock Unit Agreement					X
21	Subsidiaries of the Registrant.					X
23.1	Consent of Independent Registered Public Accounting Firm.					X
31.1	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for Steve Mollenkopf.					X
31.2	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 for George S. Davis.					X
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for Steve Mollenkopf.					X
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, for George S. Davis.					X
101.INS	XBRL Instance Document.					X
101.SCH	XBRL Taxonomy Extension Schema.					X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.					X
101.LAB	XBRL Taxonomy Extension Labels Linkbase.					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase.					X

(1) We shall furnish supplementally a copy of any omitted schedule to the Commission upon request.

(2) Indicates management contract or compensatory plan or arrangement required to be identified pursuant to Item 15(a).

(3) Confidential treatment has been requested with respect to certain portions of this exhibit.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

November 7, 2018

QUALCOMM Incorporated

By /s/ Steve Mollenkopf

Steve Mollenkopf
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Steve Mollenkopf Steve Mollenkopf	Chief Executive Officer and Director (Principal Executive Officer)	November 7, 2018
/s/ George S. Davis George S. Davis	Executive Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	November 7, 2018
/s/ Barbara T. Alexander Barbara T. Alexander	Director	November 7, 2018
/s/ Martin B. Anstice Martin B. Anstice	Director	November 7, 2018
/s/ Mark Fields Mark Fields	Director	November 7, 2018
/s/ Jeffrey W. Henderson Jeffrey W. Henderson	Chairman	November 7, 2018
/s/ Thomas W. Horton Thomas W. Horton	Director	November 7, 2018
/s/ Ann M. Livermore Ann M. Livermore	Director	November 7, 2018
/s/ Harish Manwani Harish Manwani	Director	November 7, 2018
/s/ Mark D. McLaughlin Mark D. McLaughlin	Director	November 7, 2018
/s/ Clark T. Randt, Jr. Clark T. Randt, Jr.	Director	November 7, 2018
/s/ Francisco Ros Francisco Ros	Director	November 7, 2018
/s/ Irene B. Rosenfeld Irene B. Rosenfeld	Director	November 7, 2018
/s/ Neil Smit Neil Smit	Director	November 7, 2018
/s/ Anthony J. Vinciquerra Anthony J. Vinciquerra	Director	November 7, 2018

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of QUALCOMM Incorporated:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of QUALCOMM Incorporated and its subsidiaries as of September 30, 2018 and September 24, 2017, and the related consolidated statements of operations, comprehensive (loss) income, cash flows and stockholders' equity for each of the three years in the period ended September 30, 2018, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of September 30, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 30, 2018 and September 24, 2017, and the results of their operations and their cash flows for each of the three years in the period ended September 30, 2018 in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 30, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the

company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/PricewaterhouseCoopers LLP

San Diego, California
November 7, 2018

We have served as the Company's auditor since 1985.

QUALCOMM Incorporated
CONSOLIDATED BALANCE SHEETS
(In millions, except per share data)

	September 30, 2018	September 24, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 11,777	$ 35,029
Marketable securities	311	2,279
Accounts receivable, net	2,904	3,632
Inventories	1,693	2,035
Other current assets	699	618
Total current assets	17,384	43,593
Marketable securities	35	1,270
Deferred tax assets	904	2,900
Property, plant and equipment, net	2,975	3,216
Goodwill	6,498	6,623
Other intangible assets, net	2,955	3,737
Other assets	1,935	4,147
Total assets	$ 32,686	$ 65,486
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Trade accounts payable	$ 1,825	$ 1,971
Payroll and other benefits related liabilities	1,081	1,183
Unearned revenues	500	502
Short-term debt	1,005	2,495
Other current liabilities	6,825	4,756
Total current liabilities	11,236	10,907
Unearned revenues	1,620	2,003
Income taxes payable	2,312	—
Long-term debt	15,365	19,398
Other liabilities	1,225	2,432
Total liabilities	31,758	34,740
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; 8 shares authorized; none outstanding	—	—
Common stock and paid-in capital, $0.0001 par value; 6,000 shares authorized; 1,219 and 1,474 shares issued and outstanding, respectively	—	274
Retained earnings	663	30,088
Accumulated other comprehensive income	265	384
Total stockholders' equity	928	30,746
Total liabilities and stockholders' equity	$ 32,686	$ 65,486

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF OPERATIONS
(In millions, except per share data)

	Year Ended		
	September 30, 2018	**September 24, 2017**	**September 25, 2016**
Revenues:			
Equipment and services	$ 17,400	$ 16,647	$ 15,467
Licensing	5,332	5,644	8,087
Total revenues	22,732	22,291	23,554
Costs and expenses:			
Cost of revenues	10,244	9,792	9,749
Research and development	5,625	5,485	5,151
Selling, general and administrative	2,986	2,658	2,385
Other (Note 2)	3,135	1,742	(226)
Total costs and expenses	21,990	19,677	17,059
Operating income	742	2,614	6,495
Interest expense	(768)	(494)	(297)
Investment and other income, net (Note 2)	539	900	635
Income before income taxes	513	3,020	6,833
Income tax expense (Note 3)	(5,377)	(555)	(1,131)
Net (loss) income	(4,864)	2,465	5,702
Net loss attributable to noncontrolling interests	—	1	3
Net (loss) income attributable to Qualcomm	$ (4,864)	$ 2,466	$ 5,705
Basic (loss) earnings per share attributable to Qualcomm	$ (3.32)	$ 1.67	$ 3.84
Diluted (loss) earnings per share attributable to Qualcomm	$ (3.32)	$ 1.65	$ 3.81
Shares used in per share calculations:			
Basic	1,463	1,477	1,484
Diluted	1,463	1,490	1,498

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME
(In millions)

	Year Ended		
	September 30, 2018	**September 24, 2017**	**September 25, 2016**
Net (loss) income	$ (4,864)	$ 2,465	$ 5,702
Other comprehensive (loss) income, net of income taxes:			
Foreign currency translation (losses) gains	(136)	309	(22)
Reclassification of foreign currency translation (gains) losses included in net income	—	(1)	21
Noncredit other-than-temporary impairment losses related to certain available-for-sale debt securities and subsequent changes in fair value, net of tax (expense) benefit of $0, ($3) and $23, respectively	—	6	(43)
Reclassification of net other-than-temporary losses on available-for-sale securities included in net income, net of tax benefit of $2, $46 and $71, respectively	5	85	130
Net unrealized gains (losses) on other available-for-sale securities, net of tax (expense) benefit of ($8), $59 and ($166), respectively	29	(102)	306
Reclassification of net realized gains on available-for-sale securities included in net income, net of tax expense of $3, $156 and $85, respectively	(9)	(286)	(156)
Net unrealized losses on derivative instruments, net of tax benefit of $6, $0 and $2, respectively	(17)	(49)	(4)
Reclassification of net realized losses (gains) on derivative instruments included in net income, net of tax (benefit) expense of ($4), $4 and ($2), respectively	12	(10)	1
Other (losses) gains	(3)	4	—
Total other comprehensive (loss) income	(119)	(44)	233
Total comprehensive (loss) income	(4,983)	2,421	5,935
Comprehensive loss attributable to noncontrolling interests	—	1	3
Comprehensive (loss) income attributable to Qualcomm	$ (4,983)	$ 2,422	$ 5,938

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)

	Year Ended		
	September 30, 2018	September 24, 2017	September 25, 2016
Operating Activities:			
Net (loss) income	$ (4,864)	$ 2,465	$ 5,702
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Depreciation and amortization expense	1,561	1,461	1,428
Income tax provision in excess of (less than) income tax payments (Note 3)	4,502	(400)	(200)
Non-cash portion of share-based compensation expense	883	914	943
Net realized gains on marketable securities and other investments	(124)	(530)	(288)
Indefinite and long-lived asset impairment charges	273	76	107
Impairment losses on marketable securities and other investments	75	177	172
Gain on sale of wireless spectrum	—	—	(380)
Other items, net	129	146	77
Changes in assets and liabilities:			
Accounts receivable, net	734	(1,104)	(232)
Inventories	337	(200)	(49)
Other assets	30	169	246
Trade accounts payable	(94)	(45)	541
Payroll, benefits and other liabilities	687	2,103	(128)
Unearned revenues	(234)	(231)	(307)
Net cash provided by operating activities	3,895	5,001	7,632
Investing Activities:			
Capital expenditures	(784)	(690)	(539)
Purchases of available-for-sale marketable securities	(5,936)	(19,062)	(18,015)
Proceeds from sales and maturities of available-for-sale securities	9,188	41,715	14,386
Purchases of trading securities	—	—	(177)
Proceeds from sales and maturities of trading securities	—	—	779
Purchases of other marketable securities	(49)	(710)	—
Proceeds from sales and maturities of other marketable securities	50	706	450
Release (deposits) of investments designated as collateral	2,000	(2,000)	—
Acquisitions and other investments, net of cash acquired	(326)	(1,544)	(812)
Proceeds from other investments	222	23	59
Proceeds from sale of wireless spectrum	—	—	232
Other items, net	16	25	149
Net cash provided (used) by investing activities	4,381	18,463	(3,488)
Financing Activities:			
Proceeds from short-term debt	11,131	8,558	8,949
Repayment of short-term debt	(11,127)	(9,309)	(8,200)
Proceeds from long-term debt	—	10,953	—
Repayment of long-term debt	(5,500)	—	—
Proceeds from issuance of common stock	603	497	668
Repurchases and retirements of common stock	(22,580)	(1,342)	(3,923)
Dividends paid	(3,466)	(3,252)	(2,990)
Payments of tax withholdings related to vesting of share-based awards	(280)	(268)	(224)
Payment of purchase consideration related to RF360 joint venture	(157)	(115)	—
Other items, net	(111)	(151)	(34)
Net cash (used) provided by financing activities	(31,487)	5,571	(5,754)

Effect of exchange rate changes on cash and cash equivalents	(41)	48	(4)
Net (decrease) increase in cash and cash equivalents	(23,252)	29,083	(1,614)
Cash and cash equivalents at beginning of period	35,029	5,946	7,560
Cash and cash equivalents at end of period	$ 11,777	$ 35,029	$ 5,946

See accompanying notes.

QUALCOMM Incorporated
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In millions)

	Common Stock Shares	Common Stock and Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income	Total Qualcomm Stockholders' Equity	Noncontrolling Interests	Total Stockholders' Equity
Balance at September 27, 2015	1,524	$ —	$ 31,226	$ 195	$ 31,421	$ (7)	$ 31,414
Total comprehensive income	—	—	5,705	233	5,938	(3)	5,935
Common stock issued under employee benefit plans and the related tax benefits	30	615	—	—	615	—	615
Repurchases and retirements of common stock	(73)	(974)	(2,949)	—	(3,923)	—	(3,923)
Share-based compensation	—	997	—	—	997	—	997
Tax withholdings related to vesting of share-based payments	(5)	(224)	—	—	(224)	—	(224)
Dividends	—	—	(3,046)	—	(3,046)	—	(3,046)
Balance at September 25, 2016	1,476	414	30,936	428	31,778	(10)	31,768
Total comprehensive income	—	—	2,466	(44)	2,422	(1)	2,421
Common stock issued under employee benefit plans and the related tax benefits	25	499	—	—	499	—	499
Repurchases and retirements of common stock	(23)	(1,342)	—	—	(1,342)	—	(1,342)
Share-based compensation	—	975	—	—	975	—	975
Tax withholdings related to vesting of share-based payments	(4)	(268)	—	—	(268)	—	(268)
Dividends	—	—	(3,314)	—	(3,314)	—	(3,314)
Other	—	(4)	—	—	(4)	11	7
Balance at September 24, 2017	1,474	274	30,088	384	30,746	—	30,746
Total comprehensive loss	—	—	(4,864)	(119)	(4,983)	—	(4,983)
Common stock issued under employee benefit plans and the related tax benefits	29	612	—	—	612	—	612
Repurchases and retirements of common stock	(279)	(1,536)	(21,044)	—	(22,580)	—	(22,580)
Share-based compensation	—	930	—	—	930	—	930
Tax withholdings related to vesting of share-based payments	(5)	(280)	—	—	(280)	—	(280)
Dividends	—	—	(3,517)	—	(3,517)	—	(3,517)
Balance at September 30, 2018	1,219	$ —	$ 663	$ 265	$ 928	$ —	$ 928

See accompanying notes.

QUALCOMM Incorporated
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Significant Accounting Policies

We develop, design, manufacture, have manufactured on our behalf and market digital communications products, which principally consist of integrated circuits and system software based on CDMA, OFDMA and other technologies for use in mobile devices, wireless networks, devices used in the Internet of Things (IoT), broadband gateway equipment, consumer electronic devices and automotive telematics and infotainment systems. We also grant licenses to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products and receive ongoing royalties based on sales by licensees of wireless products incorporating our patented technologies and may also receive fixed license fees (payable in one or more installments).

Principles of Consolidation. Our consolidated financial statements include the assets, liabilities and operating results of majority-owned subsidiaries, including our joint venture RF360 Holdings Singapore Pte. Ltd (RF360 Holdings) (Note 9). During the third quarter of fiscal 2018, we eliminated the one-month reporting lag previously used to consolidate our RF360 Holdings joint venture to provide contemporaneous reporting within our consolidated financial statements. The effect of this change was not material to the consolidated financial statements, and therefore, the impact of eliminating the one-month reporting lag has been included in our results of operations for fiscal 2018.

In addition, we consolidated our investment in an immaterial less than majority-owned variable interest entity as we were the primary beneficiary until the end of fiscal 2017. The ownership of the other interest holders of consolidated subsidiaries and the immaterial less than majority-owned variable interest entity is presented separately in the consolidated balance sheets and statements of operations. All significant intercompany accounts and transactions have been eliminated.

Financial Statement Preparation. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts and the disclosure of contingent amounts in our consolidated financial statements and the accompanying notes. Examples of our significant accounting estimates that may involve a higher degree of judgment and complexity than others include: the determination of other-than-temporary impairments of other investments; the valuation of inventories; the valuation and assessment of the recoverability of goodwill and other indefinite-lived and long-lived assets; the recognition, measurement and disclosure of loss contingencies related to legal and regulatory proceedings; and the calculation of tax liabilities, including the recognition and measurement of uncertain tax positions. Actual results could differ from those estimates. Certain prior year amounts have been reclassified to conform to the current year presentation.

Fiscal Year. We operate and report using a 52-53 week fiscal year ending on the last Sunday in September. The fiscal year ended September 30, 2018, included 53 weeks. The fiscal years ended September 24, 2017 and September 25, 2016 included 52 weeks.

Cash Equivalents. We consider all highly liquid investments with original maturities of 90 days or less to be cash equivalents. Cash equivalents are comprised of money market funds, certificates of deposit, commercial paper, corporate bonds and notes, certain bank time and demand deposits and government agencies' securities. The carrying amounts approximate fair value due to the short maturities of these instruments.

Marketable Securities. Marketable securities include available-for-sale securities and certain time deposits for which classification is determined at the time of purchase and reevaluated at each balance sheet date. We classify marketable securities as current or noncurrent based on the nature of the securities and their availability for use in current operations. Marketable securities are stated at fair value. The net unrealized gains or losses on available-for-sale securities are recorded as a component of accumulated other comprehensive income, net of income taxes. The realized gains and losses on marketable securities are determined using the specific identification method.

At each balance sheet date, we assess available-for-sale securities in an unrealized loss position to determine whether the unrealized loss is other than temporary. We consider factors including: the significance of the decline in value as compared to the cost basis; underlying factors contributing to a decline in the prices of securities in a single asset class; how long the market value of the security has been less than its cost basis; the security's relative performance versus its peers, sector or asset class; expected market volatility; the market and economy in general; analyst recommendations and price targets; views of external investment managers; news or financial information that has been released specific to the investee; and the outlook for the overall industry in which the investee operates.

If a debt security's market value is below amortized cost and we either intend to sell the security or it is more likely than not that we will be required to sell the security before its anticipated recovery, we record an other-than-temporary impairment charge to investment and other income, net for the entire amount of the impairment. For the remaining debt securities, if an other-than-temporary impairment exists, we separate the other-than-temporary impairment into the portion of the loss related to credit factors, or the credit loss portion, which is recorded as a charge to investment and other income, net, and the portion of the loss that is not related to credit factors, or the noncredit loss portion, which is recorded as a component of other accumulated comprehensive income, net of income taxes.

For equity securities, we consider the loss relative to the expected volatility and the likelihood of recovery over a reasonable period of time. If events and circumstances indicate that a decline in the value of an equity security has occurred and is other than temporary, we record a charge to investment and other income, net for the difference between fair value and cost at the balance sheet date. Additionally, if we either have the intent to sell the equity security or do not have both the intent and the ability to hold the equity security until its anticipated recovery, we record a charge to investment and other income, net for the difference between fair value and cost at the balance sheet date.

Equity and Cost Method Investments. We generally account for non-marketable equity investments either under the equity or the cost method. Equity investments for which we have significant influence, but not control over the investee and are not the primary beneficiary of the investee's activities are accounted for under the equity method. Other non-marketable equity investments are accounted for under the cost method. Our share of gains and losses in equity method investments are recorded in investment and other income, net. We monitor non-marketable equity investments for events or circumstances that could indicate the investments are impaired, such as a deterioration in the investee's financial condition and business forecasts and lower valuations in recently completed or proposed financings, and record a charge to investment and other income, net for the difference between the estimated fair value and the carrying value.

The carrying values of our non-marketable equity investments are recorded in other noncurrent assets and were as follows (in millions):

	September 30, 2018	September 24, 2017
Equity method investments	$ 402	$ 379
Cost method investments	650	603
	$ 1,052	$ 982

Transactions with equity method investees are considered related party transactions. Revenues from certain licensing and services contracts were $100 million with one of our equity method investees in fiscal 2018, and $165 million and $196 million with two of our equity method investees in fiscal 2017 and 2016, respectively. We eliminate unrealized profit or loss related to such transactions in relation to our ownership interest in the investee, which is recorded as a component of equity in net losses in investees in investment and other income, net. No accounts receivable were due from these equity method investees at September 30, 2018. Aggregate accounts receivable from these equity method investees were $29 million at September 24, 2017.

Derivatives. Our primary objectives for holding derivative instruments are to manage interest rate risk on our long-term debt and to manage foreign exchange risk for certain foreign currency revenues, operating expenses, receivables and payables. Derivative instruments are recorded at fair value and included in other current or noncurrent assets or other current or noncurrent liabilities based on their maturity dates. Counterparties to our derivative instruments are all major banking institutions.

Interest Rate Swaps: We manage our exposure to certain interest rate risks related to our long-term debt through the use of interest rate swaps. Such swaps allow us to effectively convert fixed-rate payments into floating-rate payments based on LIBOR. These transactions are designated as fair value hedges, and the gains and losses related to changes in the fair value of the interest rate swaps substantially offset changes in the fair value of the hedged portion of the underlying debt that are attributable to changes in the market interest rates. The net gains and losses on the interest rate swaps, as well as the offsetting gains or losses on the related fixed-rate debt attributable to the hedged risks, are recognized in earnings as interest expense in the current period. The interest settlement payments associated with the interest rate swap agreements are classified as cash flows from operating activities in the consolidated statements of cash flows.

At September 30, 2018 and September 24, 2017, the aggregate fair value of our interest rate swaps related to our long-term debt issued in May 2015 was $50 million and negligible, respectively. The fair values of the swaps were recorded in other noncurrent liabilities at September 30, 2018 and in noncurrent assets, other current liabilities and other noncurrent liabilities at September 24, 2017. At September 30, 2018, the swaps had an aggregate notional amount of $1.8 billion, which effectively converted approximately 43% and 50% of the fixed-rate debt due in 2020 and 2022, respectively, into floating-rate debt, with maturities matching our fixed-rate debt due in 2020 and 2022. At September 24, 2017, the swaps had an aggregate notional amount of $3.0 billion, which effectively converted all of the fixed-rate debt due in 2018 and approximately 43% and 50% of the fixed-rate debt due in 2020 and 2022, respectively, into floating-rate debt, with maturities matching our fixed-rate debt due in 2018, 2020 and 2022.

Foreign Currency Hedges: We manage our exposure to foreign exchange market risks, when deemed appropriate, through the use of derivative instruments, including foreign currency forward and option contracts with financial counterparties, that may or may not be designated as hedging instruments. These derivative instruments have maturity dates of less than twelve months. Gains and losses arising from the effective portion of such contracts that are designated as cash flow hedging instruments are recorded as a component of accumulated other comprehensive income as gains and losses on derivative instruments, net of income taxes. The hedging gains and losses in accumulated other comprehensive income are subsequently reclassified to revenues or costs and expenses, as applicable, in the consolidated statements of operations in the same period in which the underlying transactions affect our earnings. Gains and losses arising from the ineffective portion of such contracts, if any, are recorded in investment and other income, net as gains and losses on derivative instruments. The cash flows associated with derivative instruments designated as cash flow hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction. The cash flows associated with the ineffective portion of such derivative instruments, if any, are classified as cash flows from investing activities in the consolidated statements of cash flows. The fair values of our foreign currency forward and option contracts used to hedge foreign currency risk designated as cash flow hedges recorded in total assets and in total liabilities were negligible and $19 million, respectively, at September 30, 2018 and $10 million and $22 million, respectively at September 24, 2017.

For foreign currency forward and option contracts not designated as hedging instruments, the changes in fair value are recorded in investment and other income, net in the period of change. The cash flows associated with derivative instruments not designated as hedging instruments are classified as cash flows from operating activities in the consolidated statements of cash flows, which is the same category as the hedged transaction. The fair values of our foreign currency forward and option contracts not designated as hedging instruments were negligible at September 30, 2018 and September 24, 2017, respectively.

Gross Notional Amounts: The gross notional amounts of our interest rate and foreign currency derivatives by instrument type were as follows (in millions):

	September 30, 2018	September 24, 2017
Forwards	$ 682	$ 163
Options	1,375	2,333
Swaps	1,750	3,000
	$ 3,807	$ 5,496

The gross notional amounts by currency were as follows (in millions):

	September 30, 2018	September 24, 2017
Chinese renminbi	$ 650	$ 1,460
Euro	938	146
Indian rupee	336	772
Japanese yen	17	68
Korean won	—	50
United States dollar	1,866	3,000
	$ 3,807	$ 5,496

Fair Value Measurements. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants as of the measurement date. Applicable accounting guidance provides an established hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available.

Observable inputs are inputs that market participants would use in valuing the asset or liability and are developed based on market data obtained from sources independent of us. Unobservable inputs are inputs that reflect our assumptions about the factors that market participants would use in valuing the asset or liability. There are three levels of inputs that may be used to measure fair value:

- Level 1 includes financial instruments for which quoted market prices for identical instruments are available in active markets.

- Level 2 includes financial instruments for which there are inputs other than quoted prices included within Level 1 that are observable for the instrument.

- Level 3 includes financial instruments for which fair value is derived from valuation techniques in which one or more significant inputs are unobservable, including our own assumptions.

Assets and liabilities are classified based on the lowest level of input that is significant to the fair value measurement. We review the fair value hierarchy classification on a quarterly basis. Changes in the observability of valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy.

Cash Equivalents and Marketable Securities: With the exception of auction rate securities, we obtain pricing information from quoted market prices, pricing vendors or quotes from brokers/dealers. We conduct reviews of our primary pricing vendors to determine whether the inputs used in the vendor's pricing processes are deemed to be observable. The fair value for interest-bearing securities includes accrued interest.

The fair value of U.S. Treasury securities and government-related securities, corporate bonds and notes and common and preferred stock is generally determined using standard observable inputs, including reported trades, quoted market prices, matrix pricing, benchmark yields, broker/dealer quotes, issuer spreads, two-sided markets and/or benchmark securities.

The fair value of debt and equity funds is reported at published net asset values. We assess the daily frequency and size of transactions at published net asset values and/or the funds' underlying holdings to determine whether fair value is based on observable or unobservable inputs.

The fair value of auction rate securities is estimated using a discounted cash flow model that incorporates transaction details, such as contractual terms, maturity and timing and amount of future cash flows, as well as assumptions related to liquidity, default likelihood and recovery, the future state of the auction rate market and credit valuation adjustments of market participants. Though most of the securities we hold are pools of student loans guaranteed by the United States government, prepayment speeds and illiquidity discounts are considered significant unobservable inputs. These additional inputs are generally unobservable, and therefore, auction rate securities are included in Level 3.

Derivative Instruments: Derivative instruments that are traded on an exchange are valued using quoted market prices and are included in Level 1. Derivative instruments that are not traded on an exchange are valued using conventional calculations/models that are primarily based on observable inputs, such as foreign currency exchange rates, volatilities and interest rates, and therefore, such derivative instruments are included in Level 2.

Other Investments and Other Liabilities: Other investments and other liabilities included in Level 1 are comprised of our deferred compensation plan liability and related assets, which consist of mutual funds classified as trading securities, and are included in other assets. Other investments and other liabilities included in Level 3 are comprised of convertible debt instruments issued by private companies and contingent consideration related to business combinations, respectively. The fair value of convertible debt instruments is estimated based on the estimated timing and amount of future cash flows, as well as assumptions related to liquidity, default likelihood and recovery. The fair value of contingent consideration related to business combinations is estimated using either a real options approach or discounted cash flow model, both of which include inputs, such as projected financial information, market volatility, discount rates and timing of contractual payments. The inputs we use to estimate the fair values of the convertible debt instruments and contingent consideration are generally unobservable, and therefore, they are included in Level 3.

Allowances for Doubtful Accounts. We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We consider the following factors when determining if collection of required payments is reasonably assured: customer credit-worthiness; past transaction history with the customer; current economic industry and/or geographic trends; changes in customer payment terms; and bank credit-worthiness for letters of credit. If we have no previous experience with the customer, we may request financial information, including financial statements or other documents, to determine that the customer has the means of making payment. We may also obtain reports from various credit organizations to determine that the customer has a history of paying its creditors. If these factors do not indicate collection is reasonably assured, revenue is deferred as a reduction to accounts receivable until collection becomes reasonably assured, which is generally upon receipt of cash. If the financial condition of our customers was to deteriorate, adversely affecting their ability to make payments, additional allowances would be required.

Inventories. Inventories are valued at the lower of cost and net realizable value using the first-in, first-out method. Recoverability of inventories is assessed based on review of future customer demand that considers multiple factors, including committed purchase orders from customers as well as purchase commitment projections provided by customers and our own forecast of customer demand, among other things.

Property, Plant and Equipment. Property, plant and equipment are recorded at cost and depreciated or amortized using the straight-line method over their estimated useful lives. Upon the retirement or disposition of property, plant and equipment, the related cost and accumulated depreciation or amortization are removed, and a gain or loss is recorded, when appropriate. Buildings on owned land are depreciated over 30 years, and building improvements are depreciated over their useful lives ranging from 7 to 15 years. Leasehold improvements are amortized over the shorter of their estimated useful lives, not to exceed 15 years, or the remaining term of the related lease. Other property, plant and equipment have useful lives ranging from 2 to 25 years. Leased property meeting certain capital lease criteria is capitalized, and the net present value of the related lease payments is recorded as a liability. Amortization of assets under capital leases is recorded using the straight-line method over the shorter of the estimated useful lives or the lease terms. Maintenance, repairs and minor renewals or betterments are charged to expense as incurred.

Goodwill and Other Intangible Assets. Goodwill represents the excess of purchase price over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Acquired intangible assets other than goodwill are amortized over their useful lives unless the lives are determined to be indefinite. For intangible assets purchased in a business combination, the estimated fair values of the assets received are used to establish their recorded values. For intangible assets acquired in a non-monetary exchange, the estimated fair values of the assets transferred (or the estimated fair values of the assets received, if more clearly evident) are used to establish their recorded values, unless the values of neither the assets received nor the assets transferred are determinable within reasonable limits, in which case the assets received are measured based on the carrying values of the assets transferred. Valuation techniques consistent with the market approach, income approach and/or cost approach are used to measure fair value.

Impairment of Goodwill, Other Indefinite-Lived Assets and Long-Lived Assets. Goodwill and other indefinite-lived intangible assets are tested annually for impairment in the fourth fiscal quarter and in interim periods if events or changes in circumstances indicate that the assets may be impaired. If a qualitative assessment is used and we determine that the fair value of a reporting unit or indefinite-lived intangible asset is more likely than not (i.e., a likelihood of more than 50%) less than its carrying amount, a quantitative impairment test will be performed. Pursuant to the new guidance adopted in the fourth quarter of fiscal 2018, if goodwill is quantitatively assessed for impairment and a reporting unit’s carrying value exceeds its fair value, the difference is recorded as an impairment. Other indefinite-lived intangible assets are quantitatively assessed for impairment, if necessary, by comparing their estimated fair values to their carrying values. If the carrying value exceeds the fair value, the difference is recorded as an impairment.

Long-lived assets, such as property, plant and equipment and intangible assets subject to amortization, are reviewed for impairment when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. Recoverability of assets to be held and used is measured by comparing the carrying amount of an asset or asset group to estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of an asset or asset group exceeds its estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset or asset group exceeds the estimated fair value of the asset or asset group. Long-lived assets to be disposed of by sale are reported at the lower of their carrying amounts or their estimated fair values less costs to sell and are not depreciated.

Revenue Recognition. We derive revenues principally from sales of integrated circuit products and licensing of our intellectual property and also generate revenues through sales of products that connect medical devices and by performing software hosting, software development and other services. The timing of revenue recognition and the amount of revenue actually recognized in each case depends upon a variety of factors, including the specific terms of each arrangement and the nature of our deliverables and obligations. Unearned revenues consist primarily of license fees for intellectual property with continuing performance obligations.

Revenues from sales of our products are recognized at the time of shipment, or when title and risk of loss pass to the customer and all other criteria for revenue recognition are met, if later. Revenues from providing services are recognized when earned. Revenues from providing services were less than 10% of total revenues for all periods presented.

We grant licenses or otherwise provide rights to use portions of our intellectual property portfolio, which, among other rights, includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Licensees pay royalties based on their sales of products incorporating or using our licensed intellectual property and may also pay a fixed license fee in one or more installments. License fees are recognized over the estimated period of benefit of the license to the licensee, typically 5 to 15 years. Royalties are generally based upon a percentage of the wholesale (i.e., licensee's) selling price of complete licensed products, net of certain permissible deductions (including transportation, insurance, packing costs and other items). We broadly provide per unit royalty caps that apply to certain categories of complete wireless devices, namely smartphones, tablets and laptops, which in general, effectively provide for a maximum royalty amount per device. We earn royalties on such licensed products sold worldwide by our licensees at the time that the licensees' sales occur. Our licensees, however, do not report and pay royalties owed for sales in any given quarter until after the conclusion of that quarter, which is generally the following quarter. We recognize royalty revenues based on royalties reported by licensees during the quarter and when all other revenue recognition criteria are met.

We record reductions to revenues for customer incentive arrangements, including volume-related and other pricing rebates as well as cost reimbursements for marketing and other activities involving certain of our products and technologies. The charges for such arrangements are recorded as a reduction to accounts receivable or as other current liabilities based on whether we have the contractual right of offset. We recognize the liability based on the estimated amount of the incentive, or if not reasonably estimated, the maximum potential liability, at the later of the date at which we record the related revenues or the date at which we offer the incentive or, if payment is contingent, when the contingency is resolved. We reverse accruals for unclaimed incentive amounts to revenues when the unclaimed amounts are no longer subject to payment.

Concentrations. Revenues in fiscal 2018 and 2017 were negatively impacted by our continued dispute with Apple Inc. and Hon Hai Precision Industry Co., Ltd./Foxconn, its affiliates and other suppliers to Apple. We did not record any revenues in fiscal 2018 or the third or fourth quarter of fiscal 2017 for royalties due on sales of Apple's products.

A significant portion of our revenues are concentrated with a small number of customers/licensees of our QCT and QTL segments. Revenues from three customers/licensees comprised 16%, 11% and 11% of total consolidated revenues in fiscal 2018. Revenues from two customers/licensees comprised 17% and 18% in fiscal 2017 and 16% and 24% in fiscal 2016. Excluding the unpaid royalty receivables due from suppliers to Apple (Note 2), aggregate accounts receivable from three customers/licensees comprised 37% and 28% of accounts receivable at September 30, 2018 and September 24, 2017, respectively.

We rely on sole- or limited-source suppliers for some products, particularly products in the QCT segment, subjecting us to possible shortages of raw materials or manufacturing capacity. While we have established alternate suppliers for certain technologies that we consider critical, the loss of a supplier or the inability of a supplier to meet performance or quality specifications or delivery schedules could harm our ability to meet our delivery obligations and/or negatively impact our revenues, business operations and ability to compete for future business.

Shipping and Handling Costs. Costs incurred for shipping and handling are included in cost of revenues. Amounts billed to a customer for shipping and handling are reported as revenues.

Share-Based Compensation. Share-based compensation expense for equity-classified awards, principally related to restricted stock units (RSUs), is measured at the grant date, or at the acquisition date for awards assumed in business combinations, based on the estimated fair value of the award and is recognized over the employee's requisite service period. Share-based compensation expense is adjusted to exclude amounts related to share-based awards that are expected to be forfeited.

The fair values of RSUs are estimated based on the fair market values of the underlying stock on the dates of grant or dates the RSUs are assumed. If RSUs do not have the right to participate in dividends, the fair values are discounted by the dividend yield. The weighted-average estimated fair values of employee RSUs that contain only service requirements to vest granted during fiscal 2018, 2017 and 2016 were $62.61, $66.54 and $53.56 per share, respectively. Upon vesting, we issue new shares of common stock. For the majority of RSUs, shares are issued on the vesting dates net of the amount of shares needed to satisfy statutory tax withholding requirements to be paid by us on behalf of the employees. As a result, the actual number of shares issued will be fewer than the number of RSUs outstanding. The annual pre-vest forfeiture rate for RSUs was estimated to be approximately 6%, 5% and 4% in fiscal 2018, 2017 and 2016, respectively.

Total share-based compensation expense, related to all of our share-based awards, was comprised as follows (in millions):

	2018	2017	2016
Cost of revenues	$ 38	$ 38	$ 40
Research and development	594	588	614
Selling, general and administrative	251	288	289
Share-based compensation expense before income taxes	883	914	943
Related income tax benefit	(140)	(161)	(190)
	$ 743	$ 753	$ 753

Legal and Regulatory Proceedings. We are currently involved in certain legal and regulatory proceedings. Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Investigations by antitrust and trade regulation agencies are not conducted in a consistent manner across jurisdictions. Further, each country and agency has different sets of laws, rules and regulations, both substantive and procedural, as well as different legal principles, theories and potential remedies, and some agencies may seek to use the investigation to advance domestic policy goals. Depending on the jurisdiction, these investigations can involve non-transparent procedures under which we may not receive access to evidence relied upon by the enforcement agency or that may be exculpatory and may not be informed of the specific legal theories or evidence considered or relied upon by the agency. Unlike in civil litigation in the United States, in foreign proceedings, we may not be entitled to discovery or depositions, allowed to cross-examine witnesses or confront our accusers. As a result, we may not be aware of, and may not be entitled to know, all allegations against us, or the information or documents provided to, or discovered or prepared by, the agency. Accordingly, we may have little or no idea what an agency's intent is with respect to liability, penalties or the timing of a decision. In many cases the agencies are given significant discretion, and any available precedent may have limited, if any, predictive value in their jurisdictions, much less in other jurisdictions. Accordingly, we cannot predict the outcome of these matters.

If there is at least a reasonable possibility that a material loss may have been incurred associated with pending legal and regulatory proceedings, we disclose such fact, and if reasonably estimable, we provide an estimate of the possible loss or range of possible loss. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of loss can be reasonably estimated with no best estimate in the range, we record the minimum estimated liability. As additional information becomes available, we assess the potential liability related to pending legal and regulatory proceedings and revise our estimates and update our disclosures accordingly. Our legal costs associated with defending ourself are recorded to expense as incurred.

Foreign Currency. Certain foreign subsidiaries use a local currency as the functional currency. Resulting translation gains or losses are recognized as a component of accumulated other comprehensive income. Transaction gains or losses related to balances denominated in a currency other than the functional currency are recognized in the consolidated statements of operations.

Income Taxes. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. We record a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. We include interest and penalties related to income taxes, including unrecognized tax benefits, within income tax expense. We classify all deferred tax assets and liabilities as noncurrent in the consolidated balance sheets.

Our income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service and other tax authorities. In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. While we believe we have appropriate support for the positions taken on our tax returns, we regularly assess the potential outcomes of examinations by tax authorities in determining the adequacy of our provision for income taxes. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known.

Beginning in fiscal 2018, we recognize excess tax benefits and shortfall tax detriments associated with share-based awards in the consolidated statements of operations, as a component of income tax expense, when realized. Prior to fiscal 2018, we recognized such excess tax benefits and shortfall tax detriments directly to stockholders' equity when realized since, in the case of shortfall tax detriments, we had a sufficient APIC windfall pool. An excess tax benefit occurs when the actual tax benefit realized by us upon an employee's disposition of a share-based award exceeds the deferred tax asset, if any, associated with the award that we had recorded. A shortfall tax detriment occurs when the actual tax benefit realized by us upon an employee's disposition of a share-based award is less than the deferred tax asset, if any, associated with the award that we have recorded.

Earnings (Loss) Per Common Share. Basic earnings (loss) per common share are computed by dividing net income attributable to Qualcomm by the weighted-average number of common shares outstanding during the reporting period. Diluted earnings per common share are computed by dividing net income attributable to Qualcomm by the combination of dilutive common share equivalents, comprised of shares issuable under our share-based compensation plans and shares subject to accelerated share repurchase agreements, if any, and the weighted-average number of common shares outstanding during the reporting period. Due to the net loss in fiscal 2018, all of the common share equivalents issuable under share-based compensation plans and accelerated share repurchase agreements entered into in fiscal 2018 had an anti-dilutive effect and were therefore excluded from the computation of diluted loss per share. The following table provides information about the diluted earnings per share calculation (in millions):

	2018	2017	2016
Dilutive common share equivalents included in diluted shares	—	13.0	13.9
Shares of common stock equivalents not included because the effect would be anti-dilutive or certain performance conditions were not satisfied at the end of the period	51.2	3.0	2.4

Recent Accounting Pronouncements.

Share-based Awards: In March 2016, the Financial Accounting Standards Board (FASB) issued new guidance that changed the accounting for share-based awards, including income taxes, classification of awards and classification in the statement of cash flows. We adopted the new guidance in the first quarter of fiscal 2018. In accordance with the new guidance, excess tax benefits or deficiencies associated with share-based awards are recognized through earnings when the awards vest or settle, rather than in stockholders' equity. In fiscal 2018, net excess tax benefits associated with share-based awards of $22 million were recognized in income tax expense. In addition, cash flows related to excess tax benefits are presented as an operating activity and cash payments made on an employee's behalf for withheld shares are presented as financing activities, with the prior periods adjusted accordingly. As a result of these changes, amounts for fiscal 2017 and fiscal 2016 have been adjusted as follows: net cash provided by operating activities increased by $308 million and $232 million, respectively, with a corresponding offset to net cash used in financing activities. The new guidance also impacts our earnings per share calculation as the estimate of dilutive common share equivalents under the treasury stock method no longer assumes that the estimated tax benefits realized when an award is settled are used to repurchase shares. There was no impact of this change on our calculation of earnings per share as a result of the net loss for fiscal 2018. We elected to continue our practice of estimating forfeitures expected to occur in determining the amount of compensation cost to be recognized each period.

Revenue Recognition: In May 2014, the FASB issued new guidance related to revenue recognition, which outlines a comprehensive revenue recognition model and supersedes most current revenue recognition guidance. The new guidance requires a company to recognize revenue as control of goods or services transfers to a customer at an amount that reflects the expected consideration to be received in exchange for those goods or services. It defines a five-step approach for recognizing revenue, which may require a company to use more judgment and make more estimates than under the current guidance. We will adopt the new guidance in the first quarter of fiscal 2019 using the modified retrospective approach, with the cumulative effect of applying the new guidance recognized as an adjustment to the opening retained earnings balance. We currently estimate such adjustment will result in an increase of approximately $800 million to $1.0 billion to the opening retained earnings balance for fiscal 2019, primarily related to the impacts described below, net of the associated tax effects. We have finalized our identification of changes to policy, processes and systems, as well as our assessment of data availability, and we are in the process of finalizing changes to our controls and presentation necessary to meet the additional disclosure requirements of the guidance in the notes to the consolidated financial statements.

We currently expect the adoption of this new guidance to most significantly impact our licensing business (Qualcomm Technology Licensing, or QTL). Specifically, we expect a change in the timing of revenues recognized from sales-based royalties, which are the vast majority of QTL's revenues. We currently recognize sales-based royalties as revenues in the period in which such royalties are reported by licensees, which is after the conclusion of the quarter in which the licensees' sales occur and when all other revenue recognition criteria are met. Under the new guidance, we will be required to estimate and recognize sales-based royalties in the period in which the associated sales occur, resulting in an acceleration of revenue recognition compared to the current method. As a result of recognizing royalty revenues based on estimates, adjustments to revenues will be required in subsequent periods based on the actual amounts reported by licensees. Upon adoption of the new guidance, licenses to use portions of our intellectual property portfolio will be considered one performance obligation, and license fees will be recognized as revenues on a straight-line basis over the estimated period of benefit of the license to the licensee, which is similar to the recognition of license revenues under the current guidance. We have historically accounted for customer incentive arrangements in our licensing and semiconductor businesses, including volume-related and other pricing rebates or cost reimbursements for marketing and other activities involving certain of our products and technologies, in part based on the maximum potential liability. Under the new guidance, we will estimate the amount of all customer incentives. We do not otherwise expect the adoption of the new guidance to have a material impact on our businesses.

Financial Assets: In January 2016, the FASB issued new guidance on classifying and measuring financial instruments, which requires that (i) all equity investments, other than equity-method investments, in unconsolidated entities generally be measured at fair value through earnings and (ii) when the fair value option has been elected for financial liabilities, changes in fair value due to instrument-specific credit risk be recognized separately in other comprehensive income. Additionally, it changes the disclosure requirements for financial instruments. For equity investments that do not have readily determinable fair values, we expect to use the measurement alternative, which is defined as cost, less impairments, adjusted by observable price changes in orderly transactions for identical or similar investments. We anticipate the adoption of the new guidance will increase the volatility of our investment and other income, net due to recording the changes in fair value of equity investments through earnings. We will adopt the new guidance in the first quarter of fiscal 2019 using the modified retrospective transition method for equity investments that have readily determinable fair values, with the cumulative effect of applying the new guidance recognized as an adjustment to opening retained earnings in the year of adoption, and the prospective transition method for equity investments that do not have readily determinable fair values. Upon adoption, the unrealized gains on our marketable securities of $63 million at September 30, 2018 will be recognized as an adjustment to opening retained earnings.

In June 2016, the FASB issued new guidance that changes the accounting for recognizing impairments of financial assets. Under the new guidance, credit losses for certain types of financial instruments will be estimated based on expected losses. The new guidance also modifies the impairment models for available-for-sale debt securities and for purchased financial assets with credit deterioration since their origination. The new guidance will be effective for us starting in the first quarter of fiscal 2021 and generally requires the modified retrospective transition method, with the cumulative effect of applying the new guidance recognized as an adjustment to opening retained earnings in the year of adoption, except for certain financial assets where the prospective transition method is required, such as available-for-sale debt securities for which an other-than-temporary impairment has been recorded. Early adoption is permitted starting in the first quarter of fiscal 2020. We are in the process of determining the effects the adoption will have on our consolidated financial statements and whether to adopt the new guidance early.

Leases: In February 2016, the FASB issued new guidance related to leases that outlines a comprehensive lease accounting model and supersedes the current lease guidance. The new guidance requires lessees to recognize lease liabilities and corresponding right-of-use assets for all leases with lease terms of greater than 12 months. It also changes the definition of a lease and expands the disclosure requirements of lease arrangements. We will adopt the new guidance in the first quarter of fiscal 2020 and expect to use the modified retrospective approach and to elect certain practical expedients, with the cumulative effect of applying the new guidance recognized as an adjustment to opening retained earnings in the year of adoption. We are in the process of determining the effects the adoption will have on our consolidated financial statements.

Hedge Instruments: In August 2017, the FASB issued new guidance that expands and refines hedge accounting for both financial and non-financial risks, aligns the recognition and presentation of the effects of hedging instruments and hedged items in the financial statements, and includes targeted improvements related to the assessment of hedge effectiveness. The new guidance also modifies disclosure requirements for hedging activities. We will adopt the new guidance as of the beginning of the first quarter of fiscal 2019 using the modified retrospective transition method, with the cumulative effect of applying the new guidance recognized as an adjustment to opening retained earnings, which is expected to be negligible. We do not expect the effects of the adoption to have a material impact on our consolidated financial statements.

Other: In August 2016, the FASB issued new guidance related to the classification of certain cash receipts and cash payments on the statement of cash flows. We will adopt the new guidance in the first quarter of fiscal 2019 using the retrospective transition method for each period presented and do not expect the effects of the adoption to have a material impact on our consolidated statements of cash flows.

In October 2016, the FASB issued new guidance that changes the accounting for income tax effects of intra-entity transfers of assets other than inventory. Under the new guidance, the selling (transferring) entity is required to recognize a current tax expense or benefit upon transfer of the asset. Similarly, the purchasing (receiving) entity is required to recognize a deferred tax asset or deferred tax liability, as well as the related deferred tax benefit or expense, upon receipt of the asset. We will adopt the new guidance in the first quarter of fiscal 2019 using the modified retrospective transition method, with the cumulative effect of applying the new guidance recognized as an adjustment to opening retained earnings in the year of adoption. We estimate the increase to the opening retained earnings to be approximately $2.5 billion, primarily as the result of establishing a deferred tax asset on the basis difference of certain intellectual property distributed from one of our foreign subsidiaries to a subsidiary in the United States in fiscal 2018 (Note 3).

In November 2016, the FASB issued new guidance related to the classification and presentation of changes in restricted cash and cash equivalents in the statement of cash flows. We will adopt the new guidance in the first quarter of fiscal 2019 using the retrospective transition method for each period presented, which will result in certain amounts in fiscal 2017 and 2018 to be adjusted to conform to the new guidance upon adoption in the first quarter of fiscal 2019. During fiscal 2017 and 2018, we had restricted cash and cash equivalents related to funds deposited as collateral for outstanding letters of credit in connection with the NXP Purchase Agreement (Note 9). Restricted cash and cash equivalents related to the outstanding letters of credit totaled $700 million at the end of each of the first, second and third quarters of fiscal 2017 and $2.0 billion at the end of each of the fourth quarter of fiscal 2017 and the first, second and third quarters of fiscal 2018. There was no restricted cash at the end of the fourth quarter of fiscal 2018. Additionally, at the end of the third quarter of fiscal 2018, we had restricted cash and cash equivalents of $2.8 billion related to irrevocably deposited cash to redeem notes in July 2018. Otherwise, we do not expect the effects of the retrospective adoption to have a material impact on our consolidated statements of cash flows.

Note 2. Composition of Certain Financial Statement Items

Accounts Receivable (in millions)

	September 30, 2018	September 24, 2017
Trade, net of allowances for doubtful accounts of $56 and $11, respectively	$ 2,848	$ 3,576
Long-term contracts	20	40
Other	36	16
	$ 2,904	$ 3,632

Accounts receivable at the end of both fiscal 2018 and fiscal 2017 included approximately $960 million related to the short payment in the second quarter of fiscal 2017 of royalties reported by and deemed collectible from Apple's contract manufacturers. This same amount was recorded in customer-related liabilities (in other current liabilities) for Apple, since we do not have the contractual right to offset these amounts.

Inventories (in millions)

	September 30, 2018	September 24, 2017
Raw materials	$ 72	$ 103
Work-in-process	715	799
Finished goods	906	1,133
	$ 1,693	$ 2,035

Property, Plant and Equipment (in millions)	September 30, 2018	September 24, 2017
Land	$ 186	$ 195
Buildings and improvements	1,575	1,595
Computer equipment and software	1,419	1,609
Machinery and equipment	3,792	3,528
Furniture and office equipment	85	109
Leasehold improvements	325	310
Construction in progress	79	73
	7,461	7,419
Less accumulated depreciation and amortization	(4,486)	(4,203)
	$ 2,975	$ 3,216

Depreciation and amortization expense related to property, plant and equipment for fiscal 2018, 2017 and 2016 was $776 million, $684 million and $624 million, respectively. The gross book values of property under capital leases included in buildings and improvements were negligible at September 30, 2018 and September 24, 2017.

Goodwill and Other Intangible Assets. We allocate goodwill to our reporting units for annual impairment testing purposes. The following table presents the goodwill allocated to our reportable and nonreportable segments, as described in Note 8, as well as the changes in the carrying amounts of goodwill during fiscal 2018 and 2017 (in millions):

	QCT	QTL	Nonreportable Segments	Total
Balance at September 25, 2016	$ 4,674	$ 718	$ 287	$ 5,679
Acquisitions	841	23	11	875
Other (1)	66	—	3	69
Balance at September 24, 2017 (2)	5,581	741	301	6,623
Acquisitions	—	—	—	—
Impairments	—	(22)	(107)	(129)
Other (1)	6	(1)	(1)	4
Balance at September 30, 2018 (2)	$ 5,587	$ 718	$ 193	$ 6,498

(1) Includes changes in goodwill amounts resulting from foreign currency translation, purchase accounting adjustments.

(2) Cumulative goodwill impairments were $666 million and $537 million at September 30, 2018 and September 24, 2017, respectively.

The components of other intangible assets, net were as follows (in millions):

	September 30, 2018			September 24, 2017		
	Gross Carrying Amount	Accumulated Amortization	Weighted-average amortization period (years)	Gross Carrying Amount	Accumulated Amortization	Weighted-average amortization period (years)
Wireless spectrum	$ 1	$ —	20	$ 1	$ —	20
Marketing-related	51	(39)	5	77	(52)	4
Technology-based	6,334	(3,461)	10	6,413	(2,818)	10
Customer-related	97	(28)	10	149	(33)	9

	$ 6,483	$ (3,528)	10	$ 6,640	$ (2,903)	10

All of these intangible assets are subject to amortization, other than acquired in-process research and development with carrying values of $74 million at September 24, 2017. At September 30, 2018, all acquired in-process research and development projects were completed and are being amortized over their useful lives. Amortization expense related to these intangible assets was $785 million, $777 million and $804 million for fiscal 2018, 2017 and 2016, respectively. Amortization expense related to these intangible assets is expected to be $733 million, $630 million, $517 million, $418 million and $285 million for each of the five years from fiscal 2019 through 2023, respectively, and $372 million thereafter.

Other Current Liabilities (in millions)

	September 30, 2018	September 24, 2017
Customer incentives and other customer-related liabilities	$ 3,347	$ 2,804
Accrual for EC fine (Note 7)	1,167	—
Income taxes payable	453	312
Accrual for TFTC fine (Note 7)	—	778
RF360 Holdings Put and Call Option (Note 9)	1,137	—
Other	721	862
	$ 6,825	$ 4,756

Customer incentives and other customer-related liabilities substantially consist of amounts payable to customers for incentive and other arrangements, including volume-related and other pricing rebates and cost reimbursements for marketing and other activities involving certain of our products and technologies. The corresponding charges for such arrangements were recorded as a reduction to revenues.

Accumulated Other Comprehensive Income. Changes in the components of accumulated other comprehensive income, net of income taxes, in Qualcomm stockholders' equity during fiscal 2018 were as follows (in millions):

	Foreign Currency Translation Adjustment	Noncredit Other-than-Temporary Impairment Losses and Subsequent Changes in Fair Value for Certain Available-for-Sale Debt Securities	Net Unrealized Gain (Loss) on Other Available-for-Sale Securities	Net Unrealized Gain (Loss) on Derivative Instruments	Other Gains	Total Accumulated Other Comprehensive Income
Balance at September 24, 2017	$ 147	$ 23	$ 218	$ (8)	$ 4	$ 384
Other comprehensive (loss) income before reclassifications	(136)	—	29	(17)	(3)	(127)
Reclassifications from accumulated other comprehensive income	—	—	(4)	12	—	8
Other comprehensive (loss) income	(136)	—	25	(5)	(3)	(119)
Balance at September 30, 2018	$ 11	$ 23	$ 243	$ (13)	$ 1	$ 265

Reclassifications from accumulated other comprehensive income related to net gains on available-for-sale securities were negligible, $201 million and $83 million during fiscal 2018, 2017 and 2016, respectively, and were recorded in investment and other income, net (Note 2). Reclassifications from accumulated other comprehensive income related to foreign currency translation losses of $21 million during fiscal 2016 were recorded in selling, general and administrative expenses and other operating expenses. Reclassifications from accumulated other comprehensive income related to foreign currency translation adjustments during fiscal 2018 and 2017 were negligible. Reclassifications from accumulated other comprehensive income related to derivative instruments of $12 million, $10 million and negligible for fiscal 2018, 2017 and 2016, respectively, were recorded in revenues, cost of revenues, research and development expenses and selling, general and administrative expenses.

Other Income, Costs and Expenses. Other expenses in fiscal 2018 consisted of a $2.0 billion charge related to the termination of our purchase agreement to acquire NXP (Note 9), a $1.2 billion charge related to the European Commission

(EC) fine (Note 7), $629 million in restructuring and restructuring-related charges related to our Cost Plan (Note 10) and a $676 million benefit related to the settlement of the Taiwan Fair Trade Commission (TFTC) investigation (Note 7).

Other expenses for fiscal 2017 consisted of a $927 million charge related to the Korea Fair Trade Commission (KFTC) fine (Note 7), including related foreign currency losses, a $778 million charge related to the TFTC fine (Note 7) and $37 million in restructuring and restructuring-related charges related to our Strategic Realignment Plan (Note 10).

Other income for fiscal 2016 included a gain of $380 million on the sale of wireless spectrum in the United Kingdom that was held by the QSI (Qualcomm Strategic Initiatives) segment in the first quarter of fiscal 2016 for $232 million in cash and $275 million in deferred payments due in 2020 to 2023, which were recorded at their present values in other noncurrent assets. Other income for fiscal 2016 also included $202 million in restructuring and restructuring-related charges, which were partially offset by a $48 million gain on the sale of our business that provided augmented reality applications, all of which related to our Strategic Realignment Plan.

Investment and Other Income, Net (in millions)

	2018	2017	2016
Interest and dividend income	$ 625	$ 619	$ 611
Net realized gains on marketable securities	41	456	239
Net realized gains on other investments	83	74	49
Impairment losses on marketable securities	(6)	(131)	(112)
Impairment losses on other investments	(69)	(46)	(60)
Net (losses) gains on derivative instruments	(27)	32	(8)
Equity in net losses of investees	(145)	(74)	(84)
Net gains (losses) on foreign currency transactions	37	(30)	—
	$ 539	$ 900	$ 635

Note 3. Income Taxes

The components of the income tax provision were as follows (in millions):

	2018	2017	2016
Current provision (benefit):			
Federal	$ 2,559	$ 72	$ 4
State	(1)	3	4
Foreign	777	1,256	1,411
	3,335	1,331	1,419
Deferred provision (benefit):			
Federal	1,867	(586)	(184)
State	1	4	6
Foreign	174	(194)	(110)
	2,042	(776)	(288)
	$ 5,377	$ 555	$ 1,131

The foreign component of the income tax provision consisted primarily of foreign withholding taxes on royalty revenues included in U.S. earnings.

The components of income before income taxes by U.S. and foreign jurisdictions were as follows (in millions):

	2018	2017	2016
United States	$ (1,713)	$ (762)	$ 3,032
Foreign	2,226	3,782	3,801
	$ 513	$ 3,020	$ 6,833

The foreign component of income before income taxes in foreign jurisdictions consisted primarily of income earned in Singapore.

The following is a reconciliation of the expected statutory federal income tax provision to our actual income tax provision (in millions):

	2018	2017	2016
Expected income tax provision at federal statutory tax rate	$ 127	$ 1,057	$ 2,392
State income tax provision, net of federal benefit	2	8	19
Toll Charge from U.S. tax reform	5,236	—	—
Benefits from foreign income taxed at other than U.S. rates	(834)	(963)	(1,068)
Valuation allowance on deferred tax assets related to NXP termination fee (Note 9)	494	—	—
Remeasurement of deferred taxes due to changes in statutory rate due to U.S. tax reform	438	—	—
Benefits related to research and development tax credits	(136)	(81)	(143)
Nondeductible charges and reversals related to the EC, KFTC and TFTC investigations	(119)	363	—
Taxes on undistributed foreign earnings	87	—	—
Impact of changes in tax reserves and audit settlements for prior year tax positions	—	111	—
Worthless stock deduction of domestic subsidiary	—	—	(101)
Other	82	60	32
	$ 5,377	$ 555	$ 1,131

On December 22, 2017, tax reform legislation known as the Tax Cuts and Jobs Act (the Tax Legislation) was enacted in the United States. The Tax Legislation significantly revises the United States corporate income tax by, among other things, lowering the corporate income tax rate to 21%, implementing a modified territorial tax system and imposing a one-time repatriation tax on deemed repatriated earnings and profits of U.S.-owned foreign subsidiaries (the Toll Charge). As a fiscal-year taxpayer, certain provisions of the Tax Legislation impacted us in fiscal 2018, including the change in the corporate income tax rate and the Toll Charge, while other provisions will be effective starting at the beginning of fiscal 2019, including the implementation of a modified territorial tax system. The United States federal income tax rate reduction was effective as of January 1, 2018. Accordingly, our federal statutory income tax rate for fiscal 2018 reflected a blended rate of approximately 25%.

Pursuant to the Securities and Exchange Commission Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act, we have not finalized the accounting for the income tax effects of the Tax Legislation related to the Toll Charge. Further, we are in the process of analyzing the effects of new taxes due on certain foreign income, such as GILTI (global intangible low-taxed income), BEAT (base-erosion anti-abuse tax) and FDII (foreign-derived intangible income), and limitations on interest expense deductions (if certain conditions apply), all of which are effective starting in fiscal 2019, as well as other provisions of the Tax Legislation. We have elected to account for GILTI as period costs, if and when incurred. As a result of recognizing the impact of the Tax Legislation in income tax expense, certain tax effects, which were nominal, were stranded in accumulated other comprehensive income, and we will not reclassify such amounts to retained earnings. The impact of the Tax Legislation related to the Toll Charge may differ from this estimate during the remainder of the one-year measurement period due to, among other things, further refinement of our calculations, changes in interpretations and assumptions we have made, guidance that may be issued and actions we may take as a result of the Tax Legislation.

As a result of the Tax Legislation, we recorded a charge of $5.7 billion to income tax expense in fiscal 2018, comprised of $5.2 billion related to the estimated Toll Charge and $438 million resulting from the remeasurement of U.S. deferred tax assets and liabilities that existed at the end of fiscal 2017 at a lower enacted corporate income tax rate, which included a $135 million tax benefit recorded in fiscal 2018 related to the remeasurement of a U.S. deferred tax liability that was established as a result of a change in one of our tax positions due to Tax Legislation.

The Toll Charge is based on our post-1986 earnings and profits of U.S.-owned foreign subsidiaries through December 31, 2017 for which we had previously deferred U.S. income taxes. We have not yet finalized our calculation of the total post-1986 foreign earnings and profits for the respective foreign subsidiaries. Further, the Toll Charge is based in part on the amount of those earnings held in cash and other specific assets. In addition, we remeasured our deferred tax assets and liabilities that existed at the end of fiscal 2017 based on the income tax rate at which they are expected to reverse, which primarily assumes the reduced income tax rate of 21% applicable in fiscal 2019, resulting in a reduction to noncurrent net deferred tax assets of $438 million in fiscal 2018.

We have historically asserted our intention to indefinitely reinvest the operating earnings of certain non-U.S. subsidiaries outside the United States based on our plans for use and/or investment outside of the United States and our belief that our sources of cash and liquidity in the United States would be sufficient to meet future domestic cash needs. The Tax Legislation eliminated certain material tax effects on the repatriation of cash to the United States. Future repatriation of cash and other property held by our foreign subsidiaries will generally not be subject to U.S. federal income tax. As a result, we reevaluated our historic assertion, and as of September 30, 2018, we no longer consider substantially all of our foreign earnings to be indefinitely reinvested in our foreign subsidiaries. As a result of our change in assertion, during fiscal 2018, we recorded a charge of $87 million to income tax expense related to outside basis differences that are no longer permanently reinvested. We have not recorded a deferred tax liability of approximately $31 million related to foreign withholding taxes on approximately $137 million of undistributed earnings of certain subsidiaries that we continue to consider to be indefinitely reinvested outside the United States. Should we decide to no longer indefinitely reinvest such earnings outside the United States, we would have to adjust the income tax provision in the period management makes such determination.

As a result of the Toll Charge imposed by the Tax Legislation, we expect to fully utilize all of our unused federal tax credits that existed at the end of fiscal 2017 of $1.3 billion. We will elect to pay the Toll Charge, interest free, over a period of eight years, with payments beginning on January 15, 2019. We did not discount the amount of the Toll Charge. At September 30, 2018, we estimated that we will pay $2.5 billion for the Toll Charge, which was net of tax credit carryforwards and tax credits generated through fiscal 2018. This amount may be further reduced by excess tax credits generated in fiscal 2019. At September 30, 2018, $201 million, which represents the first installment that is due on January 15, 2019, was included in other current liabilities, with the remaining liability included in noncurrent income taxes payable.

As a result of the Tax Legislation, in fiscal 2019, several of our foreign subsidiaries will make tax elections to be treated as U.S. branches for federal income tax purposes (commonly referred to as “check-the-box” elections) effective beginning in fiscal 2018 and 2019. We believe that, by these foreign subsidiaries being treated as U.S. branches for federal income taxes, rather than controlled foreign corporations, we will significantly reduce the risk of being subject to GILTI and BEAT taxes, both of which are effective for us starting in fiscal 2019. As a result of making these check-the-box elections in the first quarter of fiscal 2019, we expect to record an estimated tax benefit of $525 million to $575 million due to establishing new U.S. net deferred tax assets resulting from the difference between the GAAP basis and the U.S. federal tax carryover basis of the existing assets and liabilities of those foreign subsidiaries, primarily related to customer incentive liabilities that have not been deducted for tax purposes. Additionally, during fiscal 2018, one of our foreign subsidiaries distributed certain intellectual property to a U.S. subsidiary resulting in a difference between the GAAP basis and the U.S. federal tax basis of the distributed intellectual property. Upon adoption of the new guidance in the first quarter fiscal 2019 that changes the accounting for income tax effects of such intra-entity transfers of assets (Note 1), we expect to record an estimated deferred tax asset of approximately $2.5 billion.

Income tax expense for fiscal 2018 was further negatively impacted by the charge recorded in the fourth quarter of fiscal 2018 related to the termination fee paid to NXP, which did not result in a tax benefit after the consideration of realizability of such loss. Fiscal 2018 and 2017 income tax expense was also impacted by the EC, KFTC and TFTC fines, and settlement with the TFTC, which are not deductible for tax purposes and portions of which were attributable to foreign jurisdictions and to the United States. These impacts were partially offset in fiscal 2018 and 2017 by lower U.S. revenues primarily related to decreased royalty revenues from Apple’s contract manufacturers and, for fiscal 2017, the BlackBerry arbitration.

Income tax expense for fiscal 2017 also reflected the increase in our Singapore tax rate as a result of the expiration of certain of our tax incentives in March 2017, which was substantially offset by tax benefits resulting from the increase in our Singapore tax rate that will be in effect when certain deferred tax assets are scheduled to reverse. During the third quarter of fiscal 2018, we entered into a new tax incentive agreement in Singapore that results in a reduced tax rate from March 2017 through March 2022, provided that we meet specified employment and investment criteria in Singapore. Our Singapore tax rate will increase in March 2022 as a result of expiration of these incentives and again in March 2027 upon the expiration of tax incentives under a prior agreement. As a result of this new tax incentive, our income tax expense for fiscal 2018 was reduced by approximately $130 million. Without these tax incentives, our income tax expense would have been higher and impacted earnings (loss) per share attributable to Qualcomm as follows (in millions, except per share amounts):

	2018	2017	2016
Additional income tax expense	$ 652	$ 493	$ 487
Reduction to diluted earnings (loss) per share	0.45	0.33	0.32

We had deferred tax assets and deferred tax liabilities as follows (in millions):

	September 30, 2018	September 24, 2017
Unused tax credits	$ 1,044	$ 1,798
Unused net operating losses	696	208
Unearned revenues	446	886
Accrued liabilities and reserves	396	888
Unrealized losses on other investments and marketable securities	126	151
Share-based compensation	97	241
Other	26	21
Total gross deferred tax assets	2,831	4,193
Valuation allowance	(1,529)	(863)
Total net deferred tax assets	1,302	3,330
Intangible assets	(322)	(535)
Accrued revenues	(202)	—
Accrued withholding taxes	(90)	—
Unrealized gains on other investments and marketable securities	(26)	(33)
Other	(49)	(95)
Total deferred tax liabilities	(689)	(663)
Net deferred tax assets	$ 613	$ 2,667
Reported as:		
Non-current deferred tax assets	$ 904	$ 2,900
Non-current deferred tax liabilities (1)	(291)	(233)
	$ 613	$ 2,667

(1) Non-current deferred tax liabilities were included in other liabilities in the consolidated balance sheets.

At September 30, 2018, we had unused federal net operating loss carryforwards of $213 million expiring from 2021 through 2035, unused state net operating loss carryforwards of $949 million expiring from 2019 through 2038 and unused foreign net operating loss carryforwards of $2.3 billion, of which $2.0 billion expire in 2027. At September 30, 2018, we had unused state tax credits of $892 million, of which substantially all may be carried forward indefinitely, unused federal tax credits of $126 million expiring from 2026 through 2028 and unused tax credits of $26 million in foreign jurisdictions expiring from 2033 through 2038. We do not expect our federal net operating loss carryforwards to expire unused.

At September 30, 2018, we have provided a valuation allowance on certain state tax credits, foreign deferred tax assets and state net operating losses of $879 million, $604 million and $46 million, respectively. The valuation allowances reflect the uncertainties surrounding our ability to generate sufficient future taxable income in certain foreign and state tax jurisdictions to utilize our net operating losses and our ability to generate sufficient capital gains to utilize all capital losses.

We believe, more likely than not, that we will have sufficient taxable income after deductions related to share-based awards to utilize our remaining deferred tax assets.

A summary of the changes in the amount of unrecognized tax benefits for fiscal 2018, 2017 and 2016 follows (in millions):

	2018	2017	2016
Beginning balance of unrecognized tax benefits	$ 372	$ 271	$ 40
Additions based on prior year tax positions	7	92	20
Reductions for prior year tax positions and lapse in statute of limitations	(11)	(11)	(6)
Additions for current year tax positions	18	23	218
Settlements with taxing authorities	(169)	(3)	(1)
Ending balance of unrecognized tax benefits	$ 217	$ 372	$ 271

We believe that it is reasonably possible that certain unrecognized tax benefits recorded at September 30, 2018 may result in a cash payment in fiscal 2019. Unrecognized tax benefits at September 30, 2018 included $92 million for tax positions that, if recognized, would impact the effective tax rate. The unrecognized tax benefits differ from the amount that would affect our effective tax rate primarily because the unrecognized tax benefits were included on a gross basis and did not reflect secondary impacts such as the federal deduction for state taxes, adjustments to deferred tax assets and the valuation allowance that might be required if our tax positions are sustained. The decrease in unrecognized tax benefits in fiscal 2018 was primarily due to an agreement reached with the IRS related to tax positions on the classification of income in our fiscal 2016 federal income tax return. The increase in unrecognized tax benefits in fiscal 2017 was primarily due to tax positions related to transfer pricing. We believe that it is reasonably possible that the total amount of unrecognized tax benefits at September 30, 2018 may increase or decrease in fiscal 2019.

We file income tax returns in the United States federal jurisdiction and various state and foreign jurisdictions. We are currently a participant in the IRS Compliance Assurance Process, whereby we and the IRS endeavor to agree on the treatment of all tax issues prior to the tax return being filed. We are no longer subject to U.S. federal income tax examinations for years prior to fiscal 2015. We are subject to examination by the California Franchise Tax Board for fiscal years after 2014. We are also subject to examination in other taxing jurisdictions in the United States and numerous foreign jurisdictions, most notably in countries where we earn a routine return and tax authorities believe substantial value-add activities are performed. These examinations are at various stages with respect to assessments, claims, deficiencies and refunds, many of which are open for periods after fiscal 2000. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts give rise to a revision become known. As of September 30, 2018, we believe that adequate amounts have been reserved for based on facts known. However, the final determination of tax audits and any related legal proceedings could materially differ from amounts reflected in our income tax provision and the related accruals.

Cash amounts paid for income taxes, net of refunds received, were $877 million, $1.0 billion and $1.3 billion for fiscal 2018, 2017 and 2016, respectively.

Note 4. Capital Stock

Stock Repurchase Program. On July 26, 2018, we announced a stock repurchase program authorizing us to repurchase up to $30 billion of our common stock. The stock repurchase program has no expiration date. The $30 billion stock repurchase program replaced a $10 billion stock repurchase program announced on May 9, 2018, of which $9.0 billion remained authorized for repurchase. In August 2018, we completed a “modified Dutch auction” tender offer and paid an aggregate of $5.1 billion, excluding fees and related expenses, to repurchase 76.2 million shares of our common stock, which were retired, at a price of $67.50 per share.

In September 2018, we entered into three accelerated share repurchase agreements (ASR Agreements) with three financial institutions under which we paid an aggregate of $16.0 billion upfront to the financial institutions and received from them an initial delivery of 178.4 million shares of our common stock, which were retired, and recorded as a $12.8 billion reduction to stockholders' equity. The final number of shares to be repurchased will be based on the volume-weighted average stock price of our common stock during the terms of the transactions, less a discount and subject to adjustments pursuant to the terms and conditions of the ASR Agreements, and will also be retired upon delivery to us and recorded as a reduction to stockholders' equity. This is evaluated as an unsettled forward contract indexed to our own stock, with $3.2

billion classified within stockholders' equity. The transactions are scheduled to terminate in August 2019 but may terminate earlier in certain circumstances. At settlement, under certain circumstances, one or more of the financial institutions may be required to deliver additional shares of common stock to us, or under certain circumstances, we may be required to deliver shares of common stock or to make a cash payment to one or more of the financial institutions, with the method of settlement at our election.

During fiscal 2018, 2017 and 2016, we repurchased and retired an additional 24.2 million, 22.8 million and 73.8 million shares of common stock, respectively, for $1.4 billion, $1.3 billion and $3.9 billion, respectively, before commissions. To reflect share repurchases in the consolidated balance sheet, we (i) reduce common stock for the par value of the shares, (ii) reduce paid-in capital for the amount in excess of par to zero during the quarter in which the shares are repurchased and (iii) record the residual amount to retained earnings. At September 30, 2018, $8.9 billion remained authorized for repurchase under our stock repurchase program. Since September 30, 2018, we repurchased and retired 8.5 million shares of common stock for $542 million.

Dividends. On October 23, 2018, we announced a cash dividend of $0.62 per share on our common stock, payable on December 20, 2018 to stockholders of record as of the close of business on December 6, 2018. Dividends charged to retained earnings in fiscal 2018, 2017 and 2016 were as follows (in millions, except per share data):

	2018		2017		2016	
	Per Share	Total	Per Share	Total	Per Share	Total
First quarter	$ 0.57	$ 862	$ 0.53	$ 801	$ 0.48	$ 730
Second quarter	0.57	857	0.53	798	0.48	726
Third quarter	0.62	921	0.57	858	0.53	794
Fourth quarter	0.62	877	0.57	857	0.53	796
	$ 2.38	$ 3,517	$ 2.20	$ 3,314	$ 2.02	$ 3,046

Note 5. Employee Benefit Plans

Employee Savings and Retirement Plan. We have a 401(k) plan that allows eligible employees to contribute up to 85% of their eligible compensation, subject to annual limits. We match a portion of the employee contributions and may, at our discretion, make additional contributions based upon earnings. Our contribution expense was $78 million, $76 million and $74 million in fiscal 2018, 2017 and 2016, respectively.

Equity Compensation Plans. On March 8, 2016, our stockholders approved the Qualcomm Incorporated 2016 Long-Term Incentive Plan (the 2016 Plan), which replaced the Qualcomm Incorporated 2006 Long-Term Incentive Plan (the Prior Plan). Effective on and after that date, no new awards will be granted under the Prior Plan, although all outstanding awards under the Prior Plan will remain outstanding according to their terms and the terms of the Prior Plan. The 2016 Plan provides for the grant of incentive and nonstatutory stock options, stock appreciation rights, restricted stock, unrestricted stock, restricted stock units, performance units, performance shares, deferred compensation awards and other stock-based awards. The share reserve under the 2016 Plan is equal to 90.0 million shares, plus approximately 20.1 million shares that were available for future grant under the Prior Plan on March 8, 2016, for a total of approximately 110.1 million shares initially available for grant under the 2016 Plan. This share reserve is automatically increased as provided in the 2016 Plan by the number of shares subject to stock options that were granted under the Prior Plan and outstanding as of March 8, 2016, which after that date expire or for any reason are forfeited, canceled or terminated, and by two times the number of shares subject to any awards other than stock options that were granted under the Prior Plan and outstanding as of March 8, 2016, which after that date expire, are forfeited, canceled or terminated, fail to vest, are not earned due to any performance goal that is not met, are otherwise reacquired without having become vested, or are paid in cash, exchanged by a participant or withheld by us to satisfy any tax withholding or tax payment obligations related to such award. The Board of Directors may amend or terminate the 2016 Plan at any time. Certain amendments, including an increase in the share reserve, require stockholder approval. At September 30, 2018, approximately 79.3 million shares were available for future grant under the 2016 Plan.

RSUs are share awards that entitle the holder to receive shares of our common stock upon vesting. The RSUs generally include dividend-equivalent rights and vest over periods of three years from the date of grant. A summary of RSU transactions that contain only service requirements to vest for all equity compensation plans follows:

	Number of Shares	Weighted-Average Grant Date Fair Value	Aggregate Intrinsic Value
	(In thousands)		(In billions)
RSUs outstanding at September 24, 2017	24,704	$ 62.46	
RSUs granted	16,297	62.61	
RSUs canceled/forfeited	(4,195)	61.74	
RSUs vested	(13,709)	63.43	
RSUs outstanding at September 30, 2018	23,097	$ 62.12	$ 1.7

At September 30, 2018, total unrecognized compensation expense related to such non-vested RSUs granted prior to that date was $889 million, which is expected to be recognized over a weighted-average period of 1.7 years. The total vest-date fair value of such RSUs that vested during fiscal 2018, 2017 and 2016 was $940 million, $820 million and $685 million, respectively. The total shares withheld to satisfy statutory tax withholding requirements related to all share-based awards were approximately 4.4 million, 4.2 million and 4.3 million in fiscal 2018, 2017 and 2016, respectively, and were based on the value of the awards on their vesting dates as determined by our closing stock price.

The Board of Directors may grant stock options to employees, directors and consultants to purchase shares of our common stock at an exercise price not less than the fair market value of the stock at the date of grant. Stock options vest over periods not exceeding five years and are exercisable for up to ten years from the grant date. A summary of stock option transactions that contain only service requirements to vest for all equity compensation plans follows:

	Number of Shares	Weighted-Average Exercise Price	Average Remaining Contractual Term	Aggregate Intrinsic Value
	(In thousands)		(Years)	(In millions)
Stock options outstanding at September 24, 2017	12,385	$ 40.99		
Stock options canceled/forfeited/expired	(59)	41.78		
Stock options exercised	(7,739)	41.03		
Stock options outstanding at September 30, 2018	4,587	40.92	0.8	$ 143
Exercisable at September 30, 2018	4,587	$ 40.92	0.8	$ 143

The total intrinsic value of stock options exercised during fiscal 2018, 2017 and 2016 was $156 million, $118 million and $147 million, respectively, and the amount of cash received from the exercise of stock options was $317 million, $236 million and $436 million, respectively. Upon option exercise, we issue new shares of stock.

The total tax benefits realized, including the excess tax benefits, related to share-based awards during fiscal 2018, 2017 and 2016 were $254 million, $301 million and $253 million, respectively.

Employee Stock Purchase Plan. We have an employee stock purchase plan for eligible employees to purchase shares of common stock at 85% of the lower of the fair market value on the first or the last day of each offering period, which is generally six months. Employees may authorize us to withhold up to 15% of their compensation during any offering period, subject to certain limitations. The employee stock purchase plan includes a non-423(b) plan. On March 23, 2018, our stockholders approved an amendment to the Amended and Restated QUALCOMM Incorporated 2001 Employee Stock Purchase Plan to increase the share reserve by 30.0 million shares. The shares authorized under the plan were approximately 101.7 million at September 30, 2018. The shares reserved for future issuance were approximately 38.9 million at September 30, 2018. During fiscal 2018, 2017 and 2016, approximately 5.8 million, 5.7 million and 6.0 million shares, respectively, were issued under the plan at an average price of $49.41,

$45.29 and $38.89 per share, respectively. At September 30, 2018, total unrecognized compensation expense related to non-vested purchase rights granted prior to that date was $24 million. We recorded cash received from the exercise of purchase rights of $286 million, $260 million and $232 million during fiscal 2018, 2017 and 2016, respectively.

Note 6. Debt

Revolving Credit Facility. We have an Amended and Restated Revolving Credit Facility (2016 Amended and Restated Revolving Credit Facility) that provides for unsecured revolving facility loans, swing line loans and letters of credit in an aggregate amount of up to $5.0 billion, of which $530 million and $4.47 billion will expire in February 2020 and November 2021, respectively. Proceeds from the Amended and Restated Revolving Credit Facility are expected to be used for general corporate purposes. Loans under the 2016 Amended and Restated Revolving Credit Facility will bear interest, at our option, at either the reserve-adjusted Eurocurrency Rate (determined in accordance with the 2016 Amended and Restated Revolving Credit Facility) or the Base Rate (determined in accordance with the 2016 Amended and Restated Revolving Credit Facility), in each case plus an applicable margin based on our long-term unsecured senior, non-credit enhanced debt ratings. The margins over the reserve-adjusted Eurocurrency Rate and the Base Rate will be 0.805% and 0.00% per annum, respectively. The 2016 Amended and Restated Revolving Credit Facility has a facility fee, which accrues at a rate of 0.07% per annum. At September 30, 2018 and September 24, 2017, we had not borrowed any funds under the 2016 Amended and Restated Revolving Credit Facility.

Commercial Paper Program. We have an unsecured commercial paper program, which provides for the issuance of up to $5.0 billion of commercial paper. Net proceeds from this program are used for general corporate purposes. Maturities of commercial paper can range from 1 day to up to 397 days. At September 30, 2018 and September 24, 2017, we had $1.0 billion and $999 million, respectively, of outstanding commercial paper recorded as short-term debt with a weighted-average interest rate of 2.35% and 1.19%, respectively, which included fees paid to the commercial paper dealers, and weighted-average remaining days to maturity of 16 days and 45 days, respectively. The carrying value of the outstanding commercial paper approximated its estimated fair value at September 30, 2018 and September 24, 2017.

NXP-Related Credit and Term Loan Facilities. In July 2018, we terminated our agreement to acquire NXP (Note 9). As a result, the credit agreements that were established primarily to finance the NXP acquisition were terminated in accordance with their terms in the fourth quarter of fiscal 2018. The credit agreements terminated had provided for (a) senior unsecured delayed-draw revolving facility loans in an aggregate amount of $3.0 billion (as amended, the 2018 Revolving Credit Facility), (b) senior unsecured delayed-draw term facility loans in an aggregate amount of $4.0 billion (as amended, the 2016 Term Loan Facility) and (c) senior unsecured delayed-draw term facility loans in an aggregate amount of $7.0 billion (as amended, the 2018 Term Loan Facility). We had not borrowed any funds under the 2018 Revolving Credit Facility, 2016 Term Loan Facility or 2018 Term Loan Facility.

Long-term Debt. In May 2015, we issued an aggregate principal amount of $10.0 billion of unsecured floating- and fixed-rate notes (May 2015 Notes) with varying maturities. The proceeds from the May 2015 Notes of $9.9 billion, net of underwriting discounts and offering expenses, were used to fund stock repurchases and also for other general corporate purposes. In May 2017, we issued an aggregate principal amount of $11.0 billion of unsecured floating- and fixed-rate notes (May 2017 Notes) with varying maturities. The proceeds from the May 2017 Notes of $10.95 billion, net of underwriting discounts and offering expenses, were intended to be used to finance, in part, our proposed acquisition of NXP and other related transactions and for general corporate purposes. Our floating-rate notes due 2019, floating-rate notes due 2020, fixed-rate 1.85% notes due 2019 and fixed-rate 2.10% notes due 2020 (collectively, the Old SMR Notes) issued in May 2017 for an aggregate principal amount of $4.0 billion were subject to special mandatory redemption provisions that required redemption on the first to occur of (i) the termination of the NXP purchase agreement or (ii) June 1, 2018 if the NXP transaction had not closed as of such date. In May 2018, we completed private offerings to exchange $122 million of the Old SMR Notes for new notes (the New SMR Notes) that had the same principal amount and terms, except for a new special mandatory redemption date of November 1, 2018 and maturity dates that were one day after the applicable maturity dates for the applicable series of Old SMR Notes. Also, in May 2018, we repurchased $71 million of Old SMR Notes that were not eligible for exchange in the May 2018 private offerings. In July 2018, we repurchased $3.8 billion of Old SMR Notes that were not exchanged in the May 2018 private offerings. In August 2018, subsequent to the termination of the NXP acquisition, we repurchased the $122 million of New SMR Notes issued in May 2018.

The following table provides a summary of our long-term debt (in millions except percentages):

	September 30, 2018		September 24, 2017	
	Amount	Effective Rate	Amount	Effective Rate
May 2015 Notes				
Floating-rate three-month LIBOR plus 0.27% notes due May 18, 2018	$ —		$ 250	1.65%
Floating-rate three-month LIBOR plus 0.55% notes due May 20, 2020	250	2.93%	250	1.92%
Fixed-rate 1.40% notes due May 18, 2018	—		1,250	1.93%
Fixed-rate 2.25% notes due May 20, 2020	1,750	3.13%	1,750	2.20%
Fixed-rate 3.00% notes due May 20, 2022	2,000	3.73%	2,000	2.65%
Fixed-rate 3.45% notes due May 20, 2025	2,000	3.46%	2,000	3.46%
Fixed-rate 4.65% notes due May 20, 2035	1,000	4.73%	1,000	4.74%
Fixed-rate 4.80% notes due May 20, 2045	1,500	4.72%	1,500	4.71%
May 2017 Notes				
Floating-rate three-month LIBOR plus 0.36% notes due May 20, 2019	—		750	1.80%
Floating-rate three-month LIBOR plus 0.45% notes due May 20, 2020	—		500	1.86%
Floating-rate three-month LIBOR plus 0.73% notes due January 30, 2023	500	3.14%	500	2.11%
Fixed-rate 1.85% notes due May 20, 2019	—		1,250	2.00%
Fixed-rate 2.10% notes due May 20, 2020	—		1,500	2.19%
Fixed-rate 2.60% notes due January 30, 2023	1,500	2.70%	1,500	2.70%
Fixed-rate 2.90% notes due May 20, 2024	1,500	3.01%	1,500	3.01%
Fixed-rate 3.25% notes due May 20, 2027	2,000	3.46%	2,000	3.46%
Fixed-rate 4.30% notes due May 20, 2047	1,500	4.47%	1,500	4.47%
Total principal	15,500		21,000	
Unamortized discount, including debt issuance costs	(85)		(106)	
Hedge accounting fair value adjustments	(50)		—	
Total long-term debt	$ 15,365		$ 20,894	
Reported as:				
Short-term debt	$ —		$ 1,496	
Long-term debt	15,365		19,398	
Total	$ 15,365		$ 20,894	

At September 30, 2018, future principal payments were $2.0 billion in fiscal 2020, $2.0 billion in fiscal 2022, $2.0 billion in fiscal 2023 and $9.5 billion after fiscal 2023; no principal payments are due in fiscal 2019 or 2021. At September 30, 2018 and September 24, 2017, the aggregate fair value of the notes, based on Level 2 inputs, was approximately $15.1 billion and $21.5 billion, respectively.

We may redeem the outstanding fixed-rate notes at any time in whole, or from time to time in part, at specified make-whole premiums as defined in the applicable form of note. We may not redeem the outstanding floating-rate notes prior to maturity. The obligations under the notes rank equally in right of payment with all of our other senior unsecured indebtedness and will effectively rank junior to all liabilities of our subsidiaries.

At September 30, 2018, we had outstanding interest rate swaps with an aggregate notional amount of $1.8 billion, related to the May 2015 Notes, which effectively converted approximately 43% and 50% of the fixed-rate notes due in 2020 and 2022, respectively, into floating-rate notes. The net gains and losses on the interest rate swaps, as well as the offsetting gains or losses on the related fixed-rate notes attributable to the hedged risks, are recorded in earnings in interest expense in the current period. We did not enter into similar interest rate swaps in connection with issuance of the May 2017 Notes.

The effective interest rates for the notes include the interest on the notes, amortization of the discount, which includes debt issuance costs, and if applicable, adjustments related to hedging. Interest is payable in arrears quarterly for the floating-rate notes and semi-annually for the fixed-rate notes. Cash interest paid related to our commercial paper program and long-term debt, net of cash received from the related interest rate swaps, was $662 million, $313 million and $282 million during fiscal 2018, 2017 and 2016, respectively.

Debt Covenants. The 2016 Amended and Restated Revolving Credit Facility requires, and the 2016 Term Loan Facility, the 2018 Revolving Credit Facility and the 2018 Term Loan Facility required, that we comply with certain covenants, including one financial covenant to maintain a ratio of consolidated earnings before interest, taxes, depreciation and amortization to consolidated interest expense, as defined in each of the respective agreements, of not less than three to one at the end of each fiscal quarter. We are not subject to any financial covenants under the notes nor any covenants that would prohibit us from incurring additional indebtedness ranking equal to the notes, paying dividends, issuing securities or repurchasing securities issued by us or our subsidiaries. At September 30, 2018 and September 24, 2017, we were in compliance with the applicable covenants under each facility outstanding at such time.

Note 7. Commitments and Contingencies

Legal and Regulatory Proceedings.

ParkerVision, Inc. v. QUALCOMM Incorporated: On May 1, 2014, ParkerVision filed a complaint against us in the United States District Court for the Middle District of Florida alleging that certain of our products infringe certain ParkerVision patents. On August 21, 2014, ParkerVision amended the complaint, captioned ParkerVision, Inc. v. QUALCOMM Incorporated, Qualcomm Atheros, Inc., HTC Corporation, HTC America, Inc., Samsung Electronics Co., LTD., Samsung Electronics America, Inc. and Samsung Telecommunications America, LLC, broadening the allegations. ParkerVision alleged that we infringe 11 ParkerVision patents and seeks damages and injunctive and other relief. On December 3, 2015, ParkerVision dismissed six patents from the lawsuit and granted us and all other defendants a covenant not to assert those patents against any existing products. On February 2, 2016, after agreement among the parties, the District Court stayed the remainder of the case pending the resolution of the complaint filed by ParkerVision against us and other parties with the United States International Trade Commission (ITC) described below. Subsequently, ParkerVision announced that it had reached a settlement with Samsung which dismissed the Samsung entities from the District Court case. We had previously filed Inter Partes Review petitions with the United States Patent and Trademark Office (USPTO) to invalidate all asserted claims of several of the remaining patents. On March 7, 2017, the USPTO decided in our favor with respect to all asserted claims of one such patent. After the ITC action described below was closed, and upon agreement among the parties, on May 24, 2017, the District Court further stayed the District Court case pending ParkerVision's appeal of the USPTO's invalidation decisions. A hearing on ParkerVision's appeal before the United States Court of Appeals for the Federal Circuit was held on August 7, 2018. On September 13, 2018, the Court of Appeals reaffirmed the USPTO's decisions. The case has been further stayed by motion of the parties while ParkerVision decides whether to bring a further appeal.

On December 14, 2015, ParkerVision filed another complaint against us in the United States District Court for the Middle District of Florida alleging patent infringement. Apple Inc., Samsung Electronics Co., LTD., Samsung Electronics America, Inc., Samsung Telecommunications America, LLC, Samsung Semiconductor, Inc., LG Electronics, Inc., LG Electronics U.S.A., Inc. and LG Electronics MobileComm U.S.A., Inc. were also named defendants. The complaint asserts that certain of our products infringe four additional ParkerVision patents and seeks damages and other relief. On December 15, 2015, ParkerVision filed a complaint with the ITC pursuant to Section 337 of the Tariff Act of 1930 against the same parties asserting the same four patents. The complaint seeks an exclusion order barring the importation of products that use either of two of our transceivers or one Samsung transceiver and a cease and desist order preventing us and the other defendants from carrying out commercial activities within the United States related to such products. On January 13, 2016, we served our answer to the District Court complaint. On January 15, 2016, the ITC instituted an investigation. On February 12, 2016, the District Court case was stayed pending completion of the ITC investigation. Subsequently, ParkerVision announced that it had reached a settlement with Samsung which dismissed the Samsung entities from the ITC investigation and related District Court case. On February 2, 2017, the ITC granted ParkerVision's motion to drop all but one patent and one accused product from the ITC investigation. On March 12, 2017, one day before the ITC hearing was scheduled to begin, ParkerVision moved to withdraw its ITC complaint in its entirety. We and the other defendants did not oppose the withdrawal of the complaint. On April 28, 2017, the ITC formally closed the investigation. On May 4, 2017, ParkerVision filed a motion to reopen the related District Court Case, and on May 26, 2017, the District Court granted the motion. On March 16, 2018, the parties agreed to dismiss three of ParkerVision's patents from the case without prejudice, leaving only one patent at issue. A claim construction hearing was held on August 31, 2018. The District Court has not issued on order on that hearing. No trial date has been set.

Apple Inc. (Apple) v. QUALCOMM Incorporated: On January 20, 2017, Apple filed a complaint against us in the United States District Court for the Southern District of California seeking declarations with respect to several of our patents and alleging that we breached certain agreements and violated federal antitrust and California state unfair competition laws. In its initial complaint, Apple sought declaratory judgments of non-infringement by Apple of nine of our patents, or in the alternative, a declaration of royalties Apple must pay for the patents. Apple further sought a declaration that our sale of baseband processor chipsets exhausts our patent rights for patents embodied in those chipsets. Separately, Apple sought to enjoin us from seeking excessive royalties from Apple and to disgorge royalties paid by Apple's contract manufacturers that the court finds were not fair, reasonable and non-discriminatory (FRAND). Apple also claimed that our refusal to make certain payments to Apple under a Business Cooperation and Patent Agreement (Cooperation Agreement) constituted a breach of contract in violation of California law and sought damages in the amount of the unpaid payments, alleged to be approximately $1 billion. In addition, Apple claimed that we have refused to deal with competitors in contravention of our agreements with applicable standard setting organizations, have used our market position to impose contractual obligations on Apple that prevented Apple from challenging our licensing practices, have tied the purchase of our CDMA-enabled and "premium" LTE-enabled chipsets to licensing certain of our patents and have required Apple to purchase baseband processor chipsets exclusively from us as a condition of our payment to Apple of certain rebates, in violation of Section 2 of the Sherman Act and the California Unfair Competition Law. Apple sought injunctive relief with respect to these claims and a judgment awarding its expenses, costs and attorneys' fees.

On April 10, 2017, we filed our Answer and Counterclaims (amended on May 24, 2017) in response to Apple's complaint denying Apple's claims and asserting claims against Apple. The counterclaims against Apple include tortious interference with our long-standing Subscriber Unit License Agreements (SULAs) with third-party contract manufacturers of Apple devices, causing those contract manufacturers to withhold certain royalty payments owed to us and violate their audit obligations; breach of contract and the implied covenant of good faith and fair dealing relating to the Cooperation Agreement; unjust enrichment and declaratory relief relating to the Cooperation Agreement; breach of contract based on Apple's failure to pay amounts owed to us under a Statement of Work relating to a high-speed feature of our baseband processor chipsets; breach of the parties' software agreement; and violation of California Unfair Competition Law based on Apple's threatening us to prevent us from promoting the superior performance of our own baseband processor chipsets. We also seek declaratory judgments that we have satisfied our FRAND commitments with respect to Apple, and that our SULAs with the contract manufacturers do not violate either competition law or our FRAND commitments. On June 19, 2017, Apple filed a Partial Motion to Dismiss our counterclaim for violation of the California Unfair Competition Law. The court granted that motion on November 8, 2017. On June 20, 2017, Apple filed an Answer and Affirmative Defenses to the rest of our counterclaims, and also filed an Amended Complaint reiterating all of the original claims and adding claims for declaratory judgments of invalidity of the nine patents that are subject to declaratory judgment claims in the original complaint, adding new declaratory judgment claims for non-infringement, invalidity and a declaration of royalties for nine more patents. Apple also added claims for declaratory judgments that certain of our agreements are unenforceable. On July 21, 2017, we filed an Answer to Apple's Amended Complaint as well as a motion to dismiss the new declaratory judgment claims for non-infringement, invalidity and a declaration of royalties for the nine additional patents. The court granted our motion on November 8, 2017.

On May 17, 2017, we filed a complaint (captioned *QUALCOMM Incorporated v. Compal Electronics, Inc. et al.*) in the United States District Court for the Southern District of California against certain of Apple's contract manufacturers, Compal Electronics, Inc. (Compal), FIH Mobile, Ltd., Hon Hai Precision Industry Co., Ltd. (together with FIH Mobile, Ltd., Foxconn), Pegatron Corporation (Pegatron) and Wistron Corporation (Wistron), asserting claims for injunctive relief, specific performance, declaratory relief and damages stemming from the defendants' breach of contracts by ceasing the payment of royalties for iPhones and other devices which they manufacture for Apple. On July 17, 2017, Compal, Foxconn, Pegatron and Wistron each filed third-party complaints for contractual indemnity against Apple seeking to join Apple as a party to the action. On July 18, 2017, Apple filed an answer to these third-party complaints acknowledging its indemnity agreements and consenting to be joined. On July 18, 2017, the defendants filed an Answer and Counterclaims to the complaint, asserting defenses and counterclaims similar to allegations previously made by Apple in the *Apple Inc. v. QUALCOMM Incorporated* case discussed above. In addition, the defendants asserted certain new claims, including claims under Section 1 of the Sherman Act and California's Cartwright Act. The defendants seek damages, declaratory relief, injunctive relief, restitution of certain royalties and other relief. On July 18, 2017, Apple filed a motion to consolidate this action with the *Apple Inc. v. QUALCOMM Incorporated* case. On September 13, 2017, the court granted Apple's consolidation motion. Fact discovery is closed in these cases.

On August 31, 2018, Apple filed a motion for judgment on the pleadings that the court lacks subject matter jurisdiction over our counterclaim that our license offers to Apple have not violated our obligation to license standard-essential patents on FRAND terms. The same day, Apple also filed motions for partial summary judgment on the following issues: that part of our claim for Apple's alleged tortious interference with its contract manufacturers' agreements is barred by the statute of limitations; that our claim for damages under the Cooperation Agreement is unfounded; and that certain of our patent rights are exhausted by the sale of our baseband processor chipsets. The foregoing motions are scheduled for hearing on November 9, 2018.

On September 14, 2018, we filed a motion to dismiss Apple's declaratory judgment claims relating to the nine specific patents identified in its original complaint on the basis that we granted Apple and its contract manufacturers a covenant-not-to-sue on those patents. If granted, this motion would dispose of a total of 56 claims pled by Apple and its contract manufacturers, including non-infringement, validity, damages and patent exhaustion for each of the nine patents (which would render Apple's motion for partial summary judgment on the issue as moot). The hearing on our motion to dismiss was held on October 26, 2018. A final pretrial conference is scheduled for November 30, 2018. The trials have not been scheduled.

On January 23, 2017, an Apple subsidiary in China filed two complaints against us in the Beijing Intellectual Property Court. On March 31, 2017, the court granted an application by Apple Inc. to join the actions as a plaintiff, and Apple amended the complaints. One of the complaints alleges a violation of China's Anti-Monopoly Law (AML complaint); the other complaint requests a determination of the terms of a patent license between us and Apple (FRAND complaint). The AML complaint alleges that (i) we have abused our dominant position in communication standard-essential patents licensing markets and certain global baseband processor chipset markets by charging and offering royalty terms that were excessively high; (ii) we refused to license certain implementers of standardized technologies, including Apple and baseband processor chipset manufacturers; (iii) we forced Apple to use only our products and services; and (iv) we bundled licenses to standard-essential patents with licenses to non-standard-essential patents and imposed other unreasonable or discriminatory trading terms on Apple in violation of the AML. The AML complaint seeks a decree that we cease the alleged abuse of dominance, as well as damages in the amount of 1 billion Chinese renminbi (approximately $145 million based on the exchange rate on September 30, 2018). The FRAND complaint makes allegations similar to the AML complaint and further alleges that we refused to offer licensing terms for our cellular standard-essential patents consistent with our FRAND licensing commitments and failed to provide to Apple certain information about our patents. The FRAND complaint seeks (i) a declaration that the license terms offered to Apple by us for our mobile communication standard-essential patents are not compliant with FRAND; (ii) an order that we cease our actions that allegedly violate our FRAND obligations, including pricing on unfair, unreasonable and excessive terms, refusing to deal, imposing unreasonable trade conditions and failing to provide information on our patents; and (iii) a determination of FRAND-compliant license terms for our Chinese standard-essential patents. Apple also seeks its expenses in each of the cases.

On August 3, 2017, we received three additional complaints filed by an Apple subsidiary and Apple Inc. against us in the Beijing Intellectual Property Court. The complaints seek declaratory judgments of non-infringement of three of our patents. We filed jurisdictional and other objections to the complaints, which the court denied on May 31, 2018. On July 5, 2018, we appealed the denial of our objections to the Beijing High People's Court.

On November 30, 2017, Apple and certain of its Chinese subsidiaries filed three patent infringement complaints against us in the Beijing Intellectual Property Court. Apple seeks damages and costs. We have filed jurisdictional objections to the complaints.

On February 16, 2017, Apple and one of its Japanese subsidiaries filed four complaints against us in the Tokyo District Court. In three of the complaints, Apple seeks declaratory judgment of non-infringement by Apple of three of our patents. Apple further seeks a declaration that our patent rights with respect to those three patents are exhausted by our SULAs with the contract manufacturers of Apple's devices as well as our sale of baseband processor chipsets. Apple also seeks an award of fees. On January 30, 2018, April 27, 2018 and July 13, 2018, the court dismissed each of Apple's three declaratory judgment complaints, finding that Apple lacked standing based on the facts it alleged in those complaints. The court has yet to rule on whether Apple has standing in the remaining complaint. On May 15, 2017, we learned of the fourth complaint. In that complaint, Apple and one of its Japanese subsidiaries seek damages of 100 million Japanese yen (approximately $1 million based on the exchange rate on September 30, 2018) from us, based on allegations that we violated the Japanese Antimonopoly Act and the Japanese Civil Code. In particular, the fourth complaint alleges that (i) we hold a monopoly position in the market for baseband processor chipsets that implement certain cellular standards; (ii) we collect double royalties through our license agreements and the sale of baseband processor chipsets; (iii) we refused to grant Apple a license on FRAND terms and forced Apple to execute a rebate agreement under unreasonable conditions; (iv) we refused to grant Apple a direct license; and (v) we demanded a license fee based on the market value of the total device. We have filed jurisdictional and other objections to this complaint.

On March 2, 2017, we learned that Apple and certain of its European subsidiaries issued a Claim Form against us in the UK High Court of Justice, Chancery Division, Patents Court on January 23, 2017. Apple subsequently filed an Amended Claim Form and Particulars of Claim. Both the Amended Claim Form and the Particulars of Claim allege several European competition law claims, including our refusal to license competing chipmakers, failure to offer Apple a direct license to our standard-essential patents on FRAND terms, demanding excessive royalties for our standard-essential patents, and demanding excessive license fees for the use of our standard-essential patents in connection with baseband processor chipsets purchased from us. Apple also seeks declarations that we are obliged to offer a direct patent license to Apple in respect of standard-essential patents actually practiced on FRAND terms and that using our baseband processor chipsets does not infringe any of our patents because we exhausted our patent rights. Finally, Apple seeks declarations that five of our European (UK) patents are invalid and not essential, and an order that each of those patents be revoked.

On April 18, 2017, Apple and one of its Taiwanese subsidiaries filed a complaint against us in the Taiwan Intellectual Property Court alleging that we have abused a dominant market position in licensing wireless standard-essential patents and selling baseband processor chipsets, including improper pricing, refusal to deal, exclusive dealing, tying, imposing unreasonable trade terms and discriminatory treatment. The complaint seeks rulings that we not use the sales price of the terminal device as the royalty base for standard-essential patents; not leverage our cellular standard-essential patents to obtain licenses of our non-standard-essential patents or demand cross-licenses without proper compensation; not refuse, reduce, delay or take any other action to limit the supply of our baseband processor chipsets to non-licensees; that we must license our standard-essential patents on FRAND terms; and that we shall not, based on standard-essential patents, seek injunctions. The complaint also seeks damages of 10 million Taiwan dollars (less than $1 million based on the exchange rate on September 30, 2018), among other relief.

We believe Apple's and its contract manufacturers' claims in the above matters are without merit.

QUALCOMM Incorporated v. Apple Inc.: On July 6, 2017, we filed a complaint against Apple in the United States District Court for the Southern District of California asserting claims for damages and injunctive relief for infringement of six of our patents directed to a variety of features found in iPhone models. On July 7, 2017, we filed a complaint against Apple in the United States International Trade Commission (ITC) requesting that the ITC institute an investigation pursuant to Section 337 of the Tariff Act of 1930 based on Apple's infringement of the same six patents. We are seeking a limited exclusion order and cease and desist order against importation of iPhone models that do not contain a Qualcomm brand baseband processor chipset. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. Apple filed an Answer and Counterclaims in the District Court case on September 26, 2017. On November 29, 2017, Apple filed a First Amended Answer and Counterclaims asserting that our Snapdragon processors infringe eight Apple patents. On August 8, 2017, the ITC issued a notice of institution of an investigation. On August 25, 2017, we withdrew allegations as to one patent in both the ITC investigation and the district court case. On April 25, 2018, we withdrew allegations as to two additional patents in the ITC investigation, but not the District Court case, in order to satisfy certain briefing limitations and to narrow the issues for hearing. The ITC investigation evidentiary hearing by the Administrative Law Judge (ALJ) was held June 18-26, 2018. The ALJ's Initial Determination on the merits was issued on September 28, 2018. The ALJ found that we had established a violation of Section 337 by Apple due to the infringement of one of the three asserted patents. However, the ALJ recommended against an exclusion order on the grounds of public interest. On October 15, 2018, the parties each filed petitions for review of portions of the ALJ's decision by the full ITC. The ITC is expected to announce the scope of its review by November 29, 2018. The target date for final determination by the ITC is set for January 28, 2019. On March 2, 2018, the District Court granted our motion to sever, for separate trial, Apple's counterclaims for patent infringement against us. Trial is scheduled to begin on March 4, 2019. With respect to Apple's patent claims against us, fact discovery is scheduled to close on December 3, 2018, and trial is scheduled to begin on July 15, 2019. All of the asserted patents have been challenged in Inter Partes Review (IPR) petitions filed by Apple, and/or in some cases by Intel, in the USPTO. No decisions have yet been issued by the USPTO.

On November 1, 2017, we filed a complaint against Apple in San Diego Superior Court for breach of the Master Software Agreement between the companies. The complaint recounts instances when Apple failed to protect our software as required by the agreement and failed to provide sufficient information to which we are entitled under the agreement in order to understand whether other breaches have occurred. The complaint seeks specific performance of Apple's obligations to cooperate with an audit of its handling of our software, damages and injunctive relief. Apple filed its answer to the complaint on December 29, 2017. On September 24, 2018, we filed a motion seeking to amend our complaint to add causes of action for additional contract breaches and misappropriation of trade secrets. On

October 26, 2018, the court granted our motion. We filed an amended complaint on October 31, 2018. No trial date is currently set.

On November 29, 2017, we filed three additional complaints against Apple in the United States District Court for the Southern District of California alleging infringement of a total of 16 of our patents. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. The complaints seek damages and injunctive relief. On January 22, 2018, Apple filed answers and counterclaims in each of these cases seeking declaratory judgments that the asserted patents are invalid and/or not infringed. Case management conferences were held on February 7, 2018 and March 1, 2018. For the case relating to the November 30, 2017 ITC investigation described below, fact discovery is scheduled to close on March 13, 2019, and trial is scheduled to begin on October 21, 2019. On June 18, 2018, Apple filed a petition with the USPTO Patent Trial and Appeal Board (PTAB) challenging the validity of one patent asserted in the November 30, 2017 ITC investigation and the corresponding District Court case. On June 29, 2018, Apple filed petitions with the USPTO PTAB challenging the validity of another patent asserted in the November 30, 2017 ITC investigation and the corresponding District Court case. For the cases not related to the ITC investigation, all of the asserted patents have been challenged in IPR proceedings filed by Apple in the USPTO. No decisions have yet been issued by the USPTO. As a result of the IPR proceedings, on August 29, 2018, the court stayed those two cases pending the outcome of the IPR proceedings.

On November 30, 2017, we filed a complaint in the ITC accusing certain Apple products of infringing five of our patents. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. We seek a limited exclusion order and cease and desist order against importation of iPhone models that do not contain a Qualcomm brand baseband processor chipset. On January 2, 2018, the ITC instituted an investigation. The evidentiary hearing by the Administrative Law Judge (ALJ) took place from September 17-24, 2018 and included three of our patents. The ALJ's Initial Determination on the merits is due on January 22, 2019, and the target date for final determination by the ITC is set for May 22, 2019.

On July 17, 2017, we filed complaints against Apple and certain of its subsidiaries in the Federal Republic of Germany, asserting infringement of one of our patents in the Mannheim District Court and infringement of another patent in the Munich District Court. On October 2, 2017, we filed claim extensions in these actions against Apple and certain of its subsidiaries, asserting infringement of two additional patents in the Mannheim District Court and infringement of five additional patents in the Munich District Court. On May 28, 2018, we filed additional claim extensions in these actions against Apple and certain of its subsidiaries, asserting infringement of three additional patents in the Mannheim District Court and infringement of one additional patent in the Munich District Court. The complaints seek remedies including, among other relief, declaratory relief confirming liability on the merits for damages and injunctive relief. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. On October 11, 2018, the Munich District Court issued a judgment declaring one of the patents asserted on October 2, 2017 as not infringed. All other patents remain pending. Hearings are scheduled for various dates through September 2019.

On September 29, 2017, we filed three complaints against Apple and certain of its subsidiaries in the Beijing (China) Intellectual Property Court, asserting infringement of three of our patents. The complaints seek remedies including injunctive relief and costs. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. On May 10, 2018 and June 21, 2018, Apple filed invalidation requests with the Chinese Patent Review Board (PRB) for the three asserted patents. The PRB has not ruled on the invalidation requests.

On November 13, 2017, we filed three complaints against certain of Apple's subsidiaries in the Beijing (China) High People's Court, asserting infringement of three of our patents. The complaints seek remedies including injunctive relief, damages and costs. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. On December 19, 2017, Apple's subsidiaries filed invalidation requests with the PRB for the three asserted patents. PRB hearings regarding the validity of the patents were held in April and May 2018. The PRB issued rulings upholding the validity of all three patents. On May 22, 2018, Apple's subsidiaries filed a second invalidation request with the PRB for one of the three asserted patents. The PRB held a hearing regarding this request on October 19, 2018.

On November 15, 2017, we filed three complaints against certain of Apple's subsidiaries in the Fuzhou (China) Intermediate People's Court, asserting infringement of three of our patents. The complaints seek remedies including injunctive relief and costs. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. Infringement hearings were held in August and September 2018. Subsequent hearings are scheduled for October 29-30, 2018. Apple's subsidiaries filed invalidation requests with the PRB on December 8, 2017 for one of the patents and December 11, 2017 for the other two patents. PRB hearings regarding the validity of the patents were held in April and May 2018. The PRB issued orders upholding the validity of two of the patents subject to Apple's invalidity challenges. The PRB has not ruled on the invalidation request with respect to the other patent.

On January 12, 2018, we filed three additional complaints against Apple and certain of its subsidiaries in the Fuzhou (China) Intermediate People's Court, asserting infringement of three additional patents. The complaints seek remedies including injunctive relief and costs. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms.

Also on January 12, 2018, we filed three complaints against certain of Apple's subsidiaries in the Jiangsu (China) High People's Court, asserting infringement of three of our patents. The complaints seek remedies including injunctive relief, damages and costs. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. On February 5, 2018, Apple's subsidiaries filed invalidation requests with the PRB. PRB hearings regarding the validity of the patents were held in June 2018. The PRB issued orders upholding the validity of one of the patents and partially upholding the validity of another patent. The PRB has not ruled on the invalidation request for the final patent.

On February 2, 2018, we filed three complaints against certain of Apple's subsidiaries in the Qingdao (China) Intermediate People's Court, asserting infringement of three of our patents. The complaints seek remedies including injunctive relief and costs. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. On February 26, 2018, Apple's subsidiaries filed invalidation requests with the PRB. PRB hearings regarding the validity of the patents were held in June 2018. The PRB issued orders upholding the validity of one of the patents and invalidating another patent. The PRB has not ruled on the invalidation request for the final patent.

Also on February 2, 2018, we filed three complaints against certain of Apple's subsidiaries in the Guangzhou (China) Intermediate People's Court, asserting infringement of three of our patents. The complaints seek remedies including injunctive relief and costs. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. On March 14, 2018, Apple's subsidiaries filed invalidation requests with the PRB. PRB hearings regarding the validity of the patents began in July 2018. The PRB issued orders upholding the validity of two of the patents. The PRB has not ruled on the invalidation request for the final patent. An infringement hearing for one of the patents was held on October 18, 2018.

On June 14, 2018, we filed three complaints against certain of Apple's subsidiaries in the Guangdong (China) High People's Court, asserting infringement of three of our patents. The complaints seek remedies including injunctive relief and costs. The patents have not been declared as essential to any standards organization and are not subject to commitments to license on FRAND terms. On August 13, 2018, Apple's subsidiaries filed invalidation requests with the PRB. The PRB has not yet set hearing dates.

We believe Apple's counterclaims and invalidation requests in the above matters are without merit.

3226701 Canada, Inc. v. QUALCOMM Incorporated et al: On November 30, 2015, a securities class action complaint was filed by purported stockholders of us in the United States District Court for the Southern District of California against us and certain of our current and former officers. On April 29, 2016, the plaintiffs filed an amended complaint. On January 27, 2017, the court dismissed the amended complaint in its entirety, granting leave to amend. On March 17, 2017, the plaintiffs filed a second amended complaint, alleging that we and certain of our current and former officers violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, by making false and misleading statements regarding our business outlook and product development between November 19, 2014 and July 22, 2015. The second amended complaint sought unspecified damages, interest, attorneys' fees and other costs. On May 8, 2017, we filed a motion to dismiss the second amended complaint. On October 20, 2017, the court entered an order granting in part our motion to dismiss, and on November 29, 2017, the court entered an order granting the remaining portions of our motion to dismiss. On December 28, 2017, the plaintiffs filed an appeal to the United States Court of Appeals for the Ninth Circuit. No hearing date has been set. We believe the plaintiffs' claims are without merit.

Consolidated Securities Class Action Lawsuit: On January 23, 2017 and January 26, 2017, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and certain of our current and former officers and directors. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, and Rule 10b-5 thereunder, by making false and misleading statements and omissions of material fact in connection with certain allegations that we are or were engaged in anticompetitive conduct. The complaints sought unspecified damages, interest, fees and costs. On May 4, 2017, the court consolidated the two actions and appointed lead plaintiffs. On July

3, 2017, the lead plaintiffs filed a consolidated amended complaint asserting the same basic theories of liability and requesting the same basic relief. On September 1, 2017, we filed a motion to dismiss the consolidated amended complaint. The court has not yet ruled on our motion to dismiss. We believe the plaintiffs' claims are without merit.

Camp v. Qualcomm Incorporated et al: On June 8, 2018 and June 26, 2018, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and two of our current officers. The complaints allege, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, and Rule 10b-5 thereunder, by failing to disclose that we had submitted a notice to the Committee on Foreign Investment in the United States (CFIUS) in January 2018. The complaints seek unspecified damages, interest, fees and costs. Upon the appointment of lead plaintiff in the action and the filing of a First Amended Complaint, we anticipate filing a motion to dismiss the complaint, as we believe the plaintiffs' claims are without merit.

Consumer Class Action Lawsuit: Since January 18, 2017, a number of consumer class action complaints have been filed against us in the United States District Courts for the Southern and Northern Districts of California, each on behalf of a putative class of purchasers of cellular phones and other cellular devices. Twenty-two such cases remain outstanding. In April 2017, the Judicial Panel on Multidistrict Litigation transferred the cases that had been filed in the Southern District of California to the Northern District of California. On May 15, 2017, the court entered an order appointing the plaintiffs' co-lead counsel. On July 11, 2017, the plaintiffs filed a consolidated amended complaint alleging that we violated California and federal antitrust and unfair competition laws by, among other things, refusing to license standard-essential patents to our competitors, conditioning the supply of certain of our baseband chipsets on the purchaser first agreeing to license our entire patent portfolio, entering into exclusive deals with companies, including Apple Inc., and charging unreasonably high royalties that do not comply with our commitments to standard setting organizations. The complaint seeks unspecified damages and disgorgement and/or restitution, as well as an order that we be enjoined from further unlawful conduct. On August 11, 2017, we filed a motion to dismiss the consolidated amended complaint. On November 10, 2017, the court denied our motion, except to the extent that certain claims seek damages under the Sherman Antitrust Act. On July 5, 2018, the plaintiffs filed a motion for class certification, and the court granted that motion on September 27, 2018. The case is currently in the discovery stage, with discovery scheduled to close on December 28, 2018. Trial is scheduled to begin on June 24, 2019. We believe the plaintiffs' claims are without merit.

Canadian Consumer Class Action Lawsuits: Since November 9, 2017, six consumer class action complaints have been filed against us in Canada (in the Ontario Superior Court of Justice, the Supreme Court of British Columbia, and the Quebec Superior Court), each on behalf of a putative class of purchasers of cellular phones and other cellular devices, alleging various violations of Canadian competition and consumer protection laws. The claims are similar to those in the FTC and U.S. consumer class action complaints. The complaints seek unspecified damages. We have not yet answered the complaints.

Japan Fair Trade Commission (JFTC) Complaint: The JFTC received unspecified complaints alleging that our business practices are, in some way, a violation of Japanese law. On September 29, 2009, the JFTC issued a cease and desist order concluding that our Japanese licensees were forced to cross-license patents to us on a royalty-free basis and were forced to accept a provision under which they agreed not to assert their essential patents against our other licensees who made a similar commitment in their license agreements with us. The cease and desist order seeks to require us to modify our existing license agreements with Japanese companies to eliminate these provisions while preserving the license of our patents to those companies. We disagree with the conclusions that we forced our Japanese licensees to agree to any provision in the parties' agreements and that those provisions violate the Japanese Antimonopoly Act. We invoked our right under Japanese law to an administrative hearing before the JFTC. In February 2010, the Tokyo High Court granted our motion and issued a stay of the cease and desist order pending the administrative hearing before the JFTC. The JFTC has held hearings on 37 different dates. No further hearings are currently scheduled. Fines or other monetary remedies are not available in this matter.

Korea Fair Trade Commission (KFTC) Complaint: On January 4, 2010, the KFTC issued a written decision finding that we violated Korean law by offering certain discounts and rebates for purchases of our CDMA chipsets and for including in certain agreements language requiring the continued payment of royalties after all licensed patents expired. The KFTC levied a fine, which we paid and recorded as an expense in fiscal 2010. We appealed to the Seoul High Court, and on June 19, 2013, the Seoul High Court affirmed the KFTC's decision. On July 4, 2013, we filed an appeal with the Korea Supreme Court. There have been no material developments since then with respect to this matter.

Korea Fair Trade Commission (KFTC) Investigation: On March 17, 2015, the KFTC notified us that it was conducting an investigation of us relating to the Korean Monopoly Regulation and Fair Trade Act (MRFTA). On December 27, 2016, the KFTC announced that it had reached a decision in the investigation, finding that we violated provisions of the MRFTA. On January 22, 2017, we received the KFTC's formal written decision, which found that the following conducts violate the MRFTA: (i) refusing to license, or imposing restrictions on licenses for, cellular communications standard-essential patents with competing modem chipset makers; (ii) conditioning the supply of modem chipsets to handset suppliers on their execution and performance of license agreements with us; and (iii) coercing agreement terms including portfolio license terms, royalty terms and free cross-grant terms in executing patent license agreements with handset makers. The KFTC's decision orders us to: (i) upon request by modem chipset companies, engage in good-faith negotiations for patent license agreements, without offering unjustifiable conditions, and if necessary submit to a determination of terms by an independent third party; (ii) not demand that handset companies execute and perform under patent license agreements as a precondition for purchasing modem chipsets; (iii) not demand unjustifiable conditions in our license agreements with handset companies, and upon request renegotiate existing patent license agreements; and (iv) notify modem chipset companies and handset companies of the decision and order imposed on us and report to the KFTC new or amended agreements. According to the KFTC's decision, the foregoing will apply to transactions between us and the following enterprises: (i) handset manufacturers headquartered in Korea and their affiliate companies; (ii) enterprises that sell handsets in or to Korea and their affiliate companies; (iii) enterprises that supply handsets to companies referred to in (ii) above and the affiliate companies of such enterprises; (iv) modem chipset manufacturers headquartered in Korea and their affiliate companies; and (v) enterprises that supply modem chipsets to companies referred to in (i), (ii) or (iii) above and the affiliate companies of such enterprises. The KFTC's decision also imposed a fine of 1.03 trillion Korean Won (approximately $927 million), which we paid on March 30, 2017. We believe that our business practices do not violate the MRFTA, and on February 21, 2017, we filed an action in the Seoul High Court to cancel the KFTC's decision. On the same day, we filed an application with the Seoul High Court to stay the decision's remedial order pending the Seoul High Court's final judgment on our action to cancel the KFTC's decision. On September 4, 2017, the Seoul High Court denied our application to stay the remedial order, and on November 27, 2017, the Korea Supreme Court dismissed our appeal of the Seoul High Court's decision on the application to stay. The Seoul High Court has not ruled on our action to cancel the KFTC's decision.

Icera Complaint to the European Commission (EC): On June 7, 2010, the EC notified and provided us with a redacted copy of a complaint filed with the EC by Icera, Inc. (subsequently acquired by Nvidia Corporation) alleging that we were engaged in anticompetitive activity. We were asked by the EC to submit a preliminary response to the portions of the complaint disclosed to us, and we submitted our response in July 2010. Subsequently, we provided additional documents and information as requested by the EC. On July 16, 2015, the EC announced that it had initiated formal proceedings in this matter. On December 8, 2015, the EC announced that it had issued a Statement of Objections expressing its preliminary view that between 2009 and 2011, we were engaged in predatory pricing by selling certain baseband chipsets to two customers at prices below cost, with the intention of hindering competition. A Statement of Objections informs the subject of the investigation of the allegations against it and provides an opportunity to respond to such allegations. It is not a determination of the final outcome of the investigation. On August 15, 2016, we submitted our response to the Statement of Objections. On July 19, 2018, the EC announced that it had issued a Supplementary Statement of Objections which focuses on certain elements of the "price-cost" test applied by the EC to assess the extent to which we sold certain baseband chipsets allegedly below cost. On October 22, 2018, we submitted our response to the Supplementary Statement of Objections. If a violation is found, a broad range of remedies is potentially available to the EC, including imposing a fine (of up to 10% of our revenues) and/or injunctive relief prohibiting or restricting certain business practices. It is difficult to predict the outcome of this matter or what remedies, if any, may be imposed by the EC. We believe that our business practices do not violate the European Union (EU) competition rules.

European Commission (EC) Investigation: On October 15, 2014, the EC notified us that it was conducting an investigation of us relating to Articles 101 and/or 102 of the Treaty on the Functioning of the European Union (TFEU). On July 16, 2015, the EC announced that it had initiated formal proceedings in this matter. On December 8, 2015, the EC announced that it had issued a Statement of Objections expressing its preliminary view that, pursuant to an agreement with Apple Inc., since 2011, we paid significant amounts to Apple on the condition that it exclusively use our baseband chipsets in its smartphones and tablets. This conduct allegedly reduced Apple's incentives to source baseband chipsets from our competitors and harmed competition and innovation for certain baseband chipsets. On January 24, 2018, the EC issued a decision finding that certain terms of that agreement violate EU competition law and imposed a fine of 997 million Euros. On April 6, 2018, we filed an appeal of the EC's decision with the General Court of the European Union. The court has not ruled on our appeal. We believe that our business practices do not violate the EU competition rules.

We recorded a charge of $1.18 billion to other expenses related to the EC fine in the first quarter of fiscal 2018. We provided financial guarantees in the third quarter of fiscal 2018 to satisfy the obligation in lieu of cash payment while we appeal the EC's decision. The fine is accruing interest at a rate of 1.50% per annum while it is outstanding. At September 30, 2018, the liability, including related foreign currency gains and accrued interest (which were recorded in investment and other income, net), was $1.17 billion and included in other current liabilities.

United States Federal Trade Commission (FTC) v. QUALCOMM Incorporated: On September 17, 2014, the FTC notified us that it was conducting an investigation of us relating to Section 5 of the Federal Trade Commission Act (FTCA). On January 17, 2017, the FTC filed a complaint against us in the United States District Court for the Northern District of California alleging that we were engaged in anticompetitive conduct and unfair methods of competition in violation of Section 5 of the FTCA by conditioning the supply of baseband processors on the purchaser first agreeing to a license to our standard-essential patents, paying incentives to purchasers of baseband processors to induce them to accept certain license terms, refusing to license our standard-essential patents to our competitors, and entering into alleged exclusive dealing arrangements with Apple Inc. The complaint seeks a permanent injunction against our alleged violations of the FTCA and other unspecified ancillary equitable relief. A fine is not an available remedy in this matter, and we do not believe that other monetary remedies are likely. On April 19, 2017, the court set a trial date for January 4, 2019. Fact and expert discovery are now closed. On August 30, 2018, the FTC moved for partial summary judgment that our commitments to license our cellular standard-essential patents to the Alliance for Telecommunications Industry Solutions (ATIS) and the Telecommunications Industry Association (TIA) require us to make licenses available to rival sellers of modem chipsets. On September 25, 2018, we filed our opposition to this motion, and on October 4, 2018, the FTC filed its reply. On October 15, 2018, we and the FTC submitted a Joint Administrative Motion asking the District Court to defer ruling on the FTC's partial summary judgment motion in order to facilitate the parties' ongoing discussions concerning settlement of this litigation, which the District Court denied on the same day. On November 6, 2018, the District Court granted the FTC's partial summary judgment motion. We believe the FTC's claims in this case are without merit.

Taiwan Fair Trade Commission (TFTC) Investigation: On December 4, 2015, the TFTC notified us that it was conducting an investigation into whether our patent licensing practices violate the Taiwan Fair Trade Act (TFTA). On October 11, 2017, the TFTC announced that it had reached a decision in the investigation, finding that we violated the TFTA. On October 23, 2017, we received TFTC's formal written decision, which found that the following conducts violate the TFTA: (i) refusing to license and demanding restrictive covenants from chipset competitors; (ii) refusing to supply baseband processors to companies that do not have an executed license; and (iii) providing a royalty discount to Apple in exchange for its exclusive use of our chipsets. The TFTC's decision was based on a four-three vote and included three written dissents. The TFTC's decision orders us to: (1) cease the following conduct within 60 days of the day after receipt of the decision: (a) applying the clauses in an agreement entered into with a competing chipset supplier requesting it to provide sensitive sales information such as chipset prices, customers, sales volumes, product types and serial numbers; (b) applying clauses in component supply agreements entered into with handset manufacturers relating to the refusal to sell chipsets to unlicensed manufacturers; and (c) applying discount clauses in the exclusive agreement entered into with a relevant enterprise; (2) notify competing chipset companies and handset manufacturers in writing within 30 days after receipt of the decision that those companies may request to amend or enter into patent license agreements and other relevant agreements within 60 days of the day following the day such notices are received, and upon receipt of such requests, we shall commence negotiation in good faith; (3) submit status reports to the TFTC on any such negotiations every six months beginning from the day after receipt of the decision, as well as to submit a report to the TFTC within 30 days after amendments to any license agreements or newly signed license agreements are executed (collectively, the TFTC Remedies). The TFTC's decision also imposed a fine of 23.4 billion Taiwan Dollars. On December 22, 2017, we filed an Administrative Litigation Complaint in the Taiwan Intellectual Property Court (IPC) to revoke the TFTC's decision.

On August 9, 2018, we announced that we had reached a settlement with the TFTC, which resolved the TFTC's investigation of us and our litigation challenging the TFTC's decision. By the terms of the Settlement Transcript executed under the supervision of the IPC, the entire TFTC decision is deemed revoked *ab initio*, including all TFTC Remedies and the fine, and the Settlement Transcript replaced the TFTC decision in its entirety. As part of the resolution, we agreed to certain process-related commitments confirming principles of mutual good-faith and fairness in the negotiation of agreements with handset licensees regarding our cellular standard-essential patents. The resolution does not require component-level licensing. In addition, we will undertake certain commercial initiatives over the next 5 years for the benefit of the mobile and semiconductor ecosystem (including small- and medium-sized enterprises and consumers), including 5G collaborations, new market expansion, start-up and university collaborations, and the development of a center for operations and manufacturing engineering located in Taiwan. Under the terms of the Settlement Transcript, the resolution of the IPC litigation and the TFTC's decision shall not constitute or be construed as any evidence of wrongdoing or an admission of liability or wrongdoing. In addition, the terms of the Settlement Transcript fully and finally resolve all concerns expressed by the TFTC with respect to the investigation of our chipset and licensing businesses. Our litigation challenging the TFTC's decision filed in the IPC is now closed. On August 8, 2018, the IPC denied certain petitions by various companies to intervene into the IPC case. On August 24, 2018, MediaTek filed an Appeal of this decision with the IPC, claiming that its petition to intervene was wrongfully denied. On October 10, 2018, we filed our opposition to MediaTek's appeal. The TFTC has also filed an opposition to MediaTek's appeal. The IPC has not set a hearing date for MediaTek's appeal. We believe that MediaTek's appeal is without merit.

In the fourth quarter of fiscal 2017, we recorded a charge of $778 million to other expenses related to the TFTC fine. The fine was to be paid in monthly installments through December 2022, and prior to the settlement, we paid seven installments totaling $93 million. As a result of the settlement, the parties agreed that the amounts we paid towards the fine through the date of the settlement will be retained by the TFTC, and no other amounts will be due. As a result, we reversed the remaining $676 million accrual to other expenses in the fourth quarter of fiscal 2018.

Contingent losses: We will continue to vigorously defend ourself in the foregoing matters. However, litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Other than with respect to the EC fine, we have not recorded any accrual at September 30, 2018 for contingent losses associated with these matters based on our belief that losses, while possible, are not probable. Further, any possible range of loss cannot be reasonably estimated at this time. The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows. We are engaged in numerous other legal actions not described above arising in the ordinary course of our business and, while there can be no assurance, believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Indemnifications. We generally do not indemnify our customers and licensees for losses sustained from infringement of third-party intellectual property rights. However, we are contingently liable under certain product sales, services, license and other agreements to indemnify certain customers, chipset foundries and semiconductor assembly and test service providers against certain types of liability and/or damages arising from qualifying claims of patent, copyright, trademark or trade secret infringement by products or services sold or provided by us, or by intellectual property provided by us to chipset foundries and semiconductor assembly and test service providers. Our obligations under these agreements may be limited in terms of time and/or amount, and in some instances, we may have recourse against third parties for certain payments made by us.

Through September 30, 2018, we have received a number of claims from our direct and indirect customers and other third parties for indemnification under such agreements with respect to alleged infringement of third-party intellectual property rights by our products. Reimbursements under indemnification arrangements have not been material to our consolidated financial statements. We have not recorded any accrual for contingent liabilities at September 30, 2018 associated with these indemnification arrangements based on our belief that additional liabilities, while possible, are not probable. Further, any possible range of loss cannot be reasonably estimated at this time.

Purchase Obligations and Operating Leases. We have agreements with suppliers and other parties to purchase inventory, other goods and services and long-lived assets. Integrated circuit product inventory obligations represent purchase commitments for raw materials, semiconductor die, finished goods and manufacturing services, such as wafer bump, probe, assembly and final test. Under our manufacturing relationships with our foundry suppliers and assembly and test service providers, cancelation of outstanding purchase commitments is generally allowed but requires payment of costs incurred through the date of cancelation, and in some cases, incremental fees related to capacity underutilization.

We lease certain of our land, facilities and equipment under noncancelable operating leases, with terms ranging from less than one year to 21 years and with provisions in certain leases for cost-of-living increases. Rental expense for fiscal 2018, 2017 and 2016 was $160 million, $129 million and $116 million, respectively.

Obligations under our purchase agreements and future minimum lease payments under our operating leases at September 30, 2018 were as follows (in millions):

	Integrated Circuit Purchase Obligations	Other Purchase Obligations	Operating Leases
2019	$ 2,647	$ 1,026	$ 117
2020	322	308	95
2021	62	102	74
2022	24	16	53
2023	—	5	31
Thereafter	—	1	43
Total	$ 3,055	$ 1,458	$ 413

Other Commitments. At September 30, 2018, we have committed to fund certain strategic investments up to $316 million, of which $35 million, $5 million, $70 million, $4 million and $4 million is expected to be funded in each of the five years from fiscal 2019 through fiscal 2023, respectively. The remaining commitments do not have fixed funding dates and are subject to certain conditions. Commitments represent the maximum amounts to be funded under these arrangements; actual funding may be in lesser amounts or not at all.

In March 2018, our RF360 Holdings joint venture entered into an agreement for a build-to-suit construction project with a third-party lessor for the development of a manufacturing facility located in Singapore. The agreement includes a long-term lease commitment with a noncancelable 10-year term commencing upon completion of the construction project. At September 30, 2018, the minimum lease commitment under the agreement based on the noncancelable term was $87 million.

Note 8. Segment Information

We are organized on the basis of products and services and have three reportable segments. We conduct business primarily through our QCT (Qualcomm CDMA Technologies) semiconductor business and our QTL (Qualcomm Technology Licensing) licensing business. QCT develops and supplies integrated circuits and system software based on CDMA, OFDMA and other technologies for use in mobile devices, wireless networks, devices used in the Internet of Things (IoT), broadband gateway equipment, consumer electronic devices and automotive telematics and infotainment systems. QTL grants licenses to use portions of our intellectual property portfolio, which includes certain patent rights essential to and/or useful in the manufacture and sale of certain wireless products. Our QSI (Qualcomm Strategic Initiatives) reportable segment makes strategic investments and includes revenues and related costs associated with development contracts with an equity method investee. We also have nonreportable segments, including our cyber security solutions (formerly Qualcomm Government Technologies or QGOV), mobile health, small cells and other wireless technology and service initiatives.

We evaluate the performance of our segments based on earnings (loss) before income taxes (EBT). Segment EBT includes the allocation of certain corporate expenses to the segments, including depreciation and amortization expense related to unallocated corporate assets. Certain income and charges are not allocated to segments in our management reports because they are not considered in evaluating the segments' operating performance. Unallocated income and charges include certain interest expense; certain net investment income; certain share-based compensation; and certain research and development expenses, selling, general and administrative expenses and other expenses or income that were deemed to be not directly related to the businesses of the segments. Additionally, unallocated charges include recognition of the step-up of inventories to fair value, amortization of certain intangible assets and certain other acquisition-related charges, third-party acquisition and integration services costs and certain other items, which may include major restructuring and restructuring-related costs, goodwill and long-lived asset impairment charges and litigation settlements and/or damages. Additionally, starting with acquisitions in the second quarter of fiscal 2017, unallocated charges include recognition of the depreciation related to the step-up of property, plant and equipment to fair value. Such charges related to acquisitions that were completed prior to the second quarter of fiscal 2017 continue to be allocated to the respective segment, and such amounts are not material.

In fiscal 2018, all of the costs ($474 million) related to pre-commercial research and development of 5G (fifth generation) technologies were included in unallocated corporate research and development expenses, whereas similar costs related to the research and development of other technologies, including 3G (third generation) and 4G (fourth generation) technologies, were recorded in the QCT and QTL segments. Beginning in the first quarter of fiscal 2019, all research and development costs associated with 5G technologies will be included in QCT and QTL segment results. Additionally, beginning in the first quarter of fiscal 2019, certain research and development costs associated with early research and development that have historically been included in our QCT segment will be allocated to our QTL segment. The net effect of these changes is expected to negatively impact QTL's EBT in fiscal 2019 by approximately $500 million and to not have a significant impact on QCT EBT in fiscal 2019.

The table below presents revenues, EBT and total assets for reportable segments (in millions):

	2018	2017	2016
Revenues			
QCT	$ 17,282	$ 16,479	$ 15,409
QTL	5,163	6,445	7,664
QSI	100	113	47
Reconciling items	187	(746)	434
Total	$ 22,732	$ 22,291	$ 23,554
EBT			
QCT	$ 2,966	$ 2,747	$ 1,812
QTL	3,525	5,175	6,528
QSI	24	65	386
Reconciling items	(6,002)	(4,967)	(1,893)
Total	$ 513	$ 3,020	$ 6,833
Assets			
QCT	$ 3,041	$ 3,830	$ 2,995
QTL	1,472	1,735	644
QSI	1,279	1,037	910
Reconciling items	26,894	58,884	47,810
Total	$ 32,686	$ 65,486	$ 52,359

Segment assets are comprised of accounts receivable and inventories for all reportable segments other than QSI. QSI segment assets include certain non-marketable equity instruments and other investments and a receivable from the sale of wireless spectrum in fiscal 2016 (Note 2). QSI assets at September 30, 2018, September 24, 2017 and September 25, 2016 included $283 million, $254 million and $162 million, respectively, related to investments in equity method investees. The decrease in fiscal 2018 QCT segment assets resulted from a decrease in accounts receivable related to the timing of integrated circuit shipments and to a decrease in inventory due to a reduction in the overall quantity of units on hand. The decrease in fiscal 2018 QTL segment assets was due to a decrease in accounts receivable resulting from the collection of receivables from certain licensees. The increase in fiscal 2017 QCT segment assets resulted primarily from our RF360 Holdings joint venture in the second quarter of fiscal 2017 (Note 9). The increase in fiscal 2017 QTL segment assets was due to an increase in accounts receivable. Total segment assets differ from total assets on a consolidated basis as a result of unallocated corporate assets primarily comprised of certain cash, cash equivalents, marketable securities, property, plant and equipment, deferred tax assets, intangible assets and assets of nonreportable segments. The net book values of long-lived tangible assets located outside of the United States were $1.4 billion at September 30, 2018 and September 24, 2017, and $404 million at September 25, 2016. The increase in fiscal 2017 was primarily from our RF360 Holdings joint venture, which has substantially all of its operations outside the United States. The net book values of long-lived tangible assets located in the United States were $1.6 billion, $1.8 billion and $1.9 billion at September 30, 2018, September 24, 2017 and September 25, 2016, respectively.

We report revenues from external customers by country based on the location to which our products or services are delivered, which for QCT is generally the country in which our customers manufacture their products, and for licensing revenues, the invoiced addresses of our licensees. As a result, the revenues by country presented herein are not necessarily indicative of either the country in which the devices containing our products and/or intellectual property are ultimately sold to consumers or the country in which the companies that sell the devices are headquartered. For example, China revenues could include revenues related to shipments of integrated circuits for a company that is headquartered in South Korea but that manufactures devices in China, which devices are then sold to consumers in Europe and/or the United States. Revenues by country were as follows (in millions):

	2018	2017	2016
China (including Hong Kong)	$ 15,149	$ 14,579	$ 13,503
South Korea	3,175	3,538	3,918
United States	603	513	386
Other foreign	3,805	3,661	5,747
	$ 22,732	$ 22,291	$ 23,554

Reconciling items for revenues and EBT in a previous table were as follows (in millions):

	2018	2017	2016
Revenues			
Nonreportable segments	$ 287	$ 311	$ 438
Reduction to revenues related to BlackBerry arbitration decision	—	(962)	—
Other unallocated reductions to revenues	(100)	(95)	—
Intersegment eliminations	—	—	(4)
	$ 187	$ (746)	$ 434
EBT			
Reduction to revenues related to BlackBerry arbitration decision	$ —	$ (962)	$ —
Other unallocated reductions to revenues	(100)	(95)	—
Unallocated cost of revenues	(486)	(517)	(495)
Unallocated research and development expenses	(1,154)	(1,056)	(799)
Unallocated selling, general and administrative expenses	(576)	(647)	(478)
Unallocated other expenses (Note 2)	(3,135)	(1,742)	(154)
Unallocated interest expense	(761)	(488)	(292)
Unallocated investment and other income, net	566	913	667
Nonreportable segments	(356)	(373)	(342)
	$ (6,002)	$ (4,967)	$ (1,893)

Other unallocated revenues in fiscal 2018 and 2017 were comprised of reductions to licensing revenues related to the portions of business arrangements that resolved legal disputes and were not allocated to a reportable segment in our management reports because they were not considered in evaluating segment results. In May 2017, in connection with the arbitration decision, we entered into a Joint Stipulation Regarding Final Award Agreement with BlackBerry Limited (BlackBerry) agreeing that we would pay BlackBerry $940 million to cover the award amount, pre-judgment interest and attorneys' fees. This amount, which was paid in the third quarter of fiscal 2017, also reflected $22 million that was owed to us by BlackBerry, which was recorded as revenues in the QTL segment. The remaining amount was recorded as an adjustment to revenues related to the arbitration decision and was not allocated to QTL. Unallocated other expenses in fiscal 2018 were comprised of charges related to the termination of our purchase agreement to acquire NXP (Note 9), the EC fine (Note 7), and our Cost Plan (Note 10), partially offset by a benefit related to the settlement of the TFTC investigation (Note 7). Unallocated other expenses in fiscal 2017 were comprised of charges related to the fines imposed by the KFTC and the TFTC, which was settled in fiscal 2018 (Note 7), as well as restructuring and restructuring-related charges related to our Strategic Realignment Plan, which was substantially implemented in fiscal 2016 (Note 10). Unallocated other expenses for fiscal 2016 were comprised of net restructuring and restructuring-related charges related to our Strategic Realignment Plan.

Unallocated acquisition-related expenses were comprised as follows (in millions):

	2018	2017	2016
Cost of revenues	$ 449	$ 437	$ 434
Research and development expenses	6	20	10
Selling, general and administrative expenses	327	272	99

Note 9. Acquisitions

Terminated. On October 27, 2016, we announced a definitive agreement (as amended on February 20, 2018 and April 19, 2018, the Purchase Agreement) under which Qualcomm River Holdings, B.V. (Qualcomm River Holdings), an indirect, wholly owned subsidiary of QUALCOMM Incorporated, proposed to acquire NXP Semiconductors N.V. (NXP). Pursuant to the Purchase Agreement, Qualcomm River Holdings commenced a tender offer to acquire all of the issued and outstanding common shares of NXP. On July 26, 2018, we terminated the Purchase Agreement, and we paid NXP a termination fee of $2.0 billion in cash in accordance with the terms of the Purchase Agreement.

Completed. On February 3, 2017, we completed the formation of a joint venture with TDK Corporation (TDK), under the name RF360 Holdings, to enable delivery of radio frequency front-end (RFFE) modules and radio frequency (RF) filters into fully integrated products for mobile devices and Internet of Things (IoT) applications, among others. The joint venture is owned 51% by Qualcomm Global Trading Pte. Ltd. (Qualcomm Global Trading), a Singapore corporation and wholly-owned subsidiary of ours, and 49% by EPCOS AG (EPCOS), a German wholly-owned subsidiary of TDK. RF360 Holdings is a Singapore corporation with research and development and manufacturing and/or sales locations in the United States, Europe and Asia and its headquarters in Munich, Germany. Certain intellectual property, patents and filter and module design and manufacturing assets were carved out of existing TDK businesses and are owned by the joint venture, and certain assets were acquired directly by our affiliates. Qualcomm Global Trading has the option to acquire (and EPCOS has an option to sell) EPCOS's interest in the joint venture for $1.15 billion (Settlement Amount) in August 2019 (the Put and Call Option).

EPCOS is entitled to up to a total of $200 million in payments based on sales of RF filter functions over the three-year period after the Closing Date, which is a substitute for and in lieu of the right of EPCOS to receive any profit sharing, distributions, dividends or other payments of any kind or nature. Such contingent consideration was recorded as a liability at fair value at close based on significant inputs that were not observable, with future changes in fair value recorded in earnings. Such fair value adjustments resulted in a $23 million gain and a negligible gain in fiscal 2018 and fiscal 2017, respectively.

RF360 Holdings is a variable interest entity, and its results of operations and statement of financial position are included in our consolidated financial statements as the governance structure of RF360 Holdings provides us with the power to direct the activities of the joint venture that most significantly impact its economic performance, such as operating decisions related to research and development, manufacturing and sales and marketing of its products. Since the Put and Call Option is considered a financing of our purchase of EPCOS's interest in RF360 Holdings, noncontrolling interest is not recorded in our consolidated financial statements. Therefore, the Put and Call Option was recorded as a liability at fair value at close and was included in other current liabilities at September 30, 2018 and other noncurrent liabilities at September 24, 2017. The liability is being accreted to the Settlement Amount, with the offset recorded as interest expense. The carrying value of the Put and Call Option approximated its estimated fair value at September 30, 2018.

The total purchase price consisted of the following (in millions):

Cash paid to TDK at close	$ 1,463
Fair value of Put and Call Option	1,112
Fair value of contingent consideration and other deferred payments	496
Total purchase price	$ 3,071

The allocation of the purchase price to the assets acquired and liabilities assumed based on their fair values was as follows (in millions):

Cash and cash equivalents	$	306
Accounts receivable		303
Inventories		260
Intangible assets subject to amortization:		
Technology-based intangible assets		738
Customer-related intangible assets		87
Marketing-related intangible assets		8
In-process research and development (IPR&D)		75
Property, plant and equipment		821
Goodwill		843
Other assets		31
Total assets		3,472
Liabilities		(401)
	$	3,071

We recognized $843 million in goodwill related to this transaction, of which $366 million is expected to be deductible for tax purposes. The goodwill recognized was allocated to the QCT segment for annual impairment testing purposes. The goodwill is primarily attributable to the assembled workforce and synergies expected to arise after the acquisition. Each category of intangible assets acquired are being amortized on a straight-line basis over the weighted-average useful lives of seven years for technology-based intangible assets, nine years for customer-related intangible assets and one year for marketing-related intangible assets. At September 30, 2018, all IPR&D projects had been completed and are being amortized over their weighted-average useful lives of six years. The estimated fair values of the intangible assets and the property, plant and equipment acquired were determined using the income approach and cost approach, respectively, both of which were based on significant inputs that were not observable.

The following table presents the unaudited pro forma results for fiscal 2017 and fiscal 2016. The unaudited pro forma financial information combines the results of operations of Qualcomm and RF360 Holdings as though the companies had been combined as of the beginning of fiscal 2016. The pro forma information is presented for informational purposes only and is not indicative of the results of operations that would have been achieved if the acquisition had taken place at such time. The unaudited pro forma results presented below include adjustments for the step-up of inventories to fair value, amortization and depreciation of identified intangible assets and property, plant and equipment, adjustments for certain acquisition-related charges, interest expense related to the Put and Call Option and related tax effects (in millions):

	(Unaudited)	
	2017	**2016**
Pro forma revenues	$ 22,806	$ 24,731
Pro forma net income attributable to Qualcomm	2,614	5,791

During fiscal 2017, we acquired three other businesses for total cash consideration of $35 million, net of cash acquired, and up to a total of $94 million in certain contingent payments, which were recorded as a liability at fair value. We recognized $47 million in goodwill related to these transactions, of which $12 million is expected to be deductible for tax purposes. Goodwill of $23 million, $12 million and $11 million was assigned to our QTL, QCT and nonreportable segments, respectively.

During fiscal 2016, we acquired four businesses for total cash consideration of $392 million, net of cash acquired. Technology-based intangible assets of $257 million were recognized with a weighted-average useful life of four years. We recognized $172 million in goodwill related to these transactions, all of which was assigned to our QCT segment and of which $24 million is expected to be deductible for tax purposes.

Note 10. Restructuring Plans

Cost Plan. In the second quarter of fiscal 2018, we announced a Cost Plan designed to align our cost structure to our long-term margin targets. As part of this plan, we have initiated a series of targeted actions across our businesses to reduce annual costs by $1 billion, excluding incremental costs resulting from any future acquisition of a business. We expect these cost reductions to be fully captured in fiscal 2019.

During fiscal 2018, we recorded restructuring and restructuring-related charges of $629 million in other expenses and charges of $58 million in investment and other income, net (Note 2), which consisted of restructuring charges of $353 million, primarily related to severance costs, and restructuring-related charges of $334 million, primarily related to asset impairment charges (and which was net of a $41 million gain resulting from fair value adjustments of certain contingent consideration related to a business combination). In connection with this plan, we expect to incur additional restructuring and restructuring-related charges of up to $100 million, which primarily consist of severance and consulting costs, and the vast majority of which are expected to be settled in cash.

The restructuring accrual, a portion of which was included in payroll and other benefits related liabilities with the remainder included in other current liabilities, is expected to be substantially paid within the next 12 months. Changes in the restructuring accrual for fiscal 2018 were as follows (in millions):

	Severance Costs	Other Costs	Total
Beginning balance of restructuring accrual	$ —	$ —	$ —
Costs	317	43	360
Cash payments	(251)	(19)	(270)
Adjustments	(5)	(2)	(7)
Ending balance of restructuring accrual	$ 61	$ 22	$ 83

Strategic Realignment Plan. In the fourth quarter of fiscal 2015, we announced a Strategic Realignment Plan designed to improve execution, enhance financial performance and drive profitable growth as we worked to create sustainable long-term value for stockholders. As part of this, among other actions, we implemented a cost reduction plan, which included a series of targeted reductions across our businesses, particularly in QCT, and a reduction to our annual share-based compensation grants. Restructuring activities were initiated in the fourth quarter of fiscal 2015, and the cost reduction initiatives were achieved by the end of fiscal 2016 and other activities under the plan were completed by the end of fiscal 2017. During fiscal 2017 and 2016, we recorded restructuring and restructuring-related charges of $37 million and $202 million (which was partially offset by a $48 million gain on the sale of our business that provided augmented reality applications), respectively.

Note 11. Fair Value Measurements

The following table presents our fair value hierarchy for assets and liabilities measured at fair value on a recurring basis at September 30, 2018 (in millions):

	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents	$ 7,147	$ 2,867	$ —	$ 10,014
Marketable securities:				
Corporate bonds and notes	—	144	—	144
Auction rate securities	—	—	35	35
Equity and preferred securities	167	—	—	167
Total marketable securities	167	144	35	346
Derivative instruments	—	3	—	3
Other investments	380	—	16	396
Total assets measured at fair value	$ 7,694	$ 3,014	$ 51	$ 10,759
Liabilities				
Derivative instruments	$ —	$ 71	$ —	$ 71
Other liabilities	380	—	86	466
Total liabilities measured at fair value	$ 380	$ 71	$ 86	$ 537

Activity within Level 3 of the Fair Value Hierarchy. The following table includes the activity for marketable securities, other investments and other liabilities classified within Level 3 of the valuation hierarchy (in millions):

	2018			2017		
	Marketable Securities	Other Investments	Other Liabilities	Marketable Securities	Other Investments	Other Liabilities
Beginning balance of Level 3	$ 40	$ 125	$ 196	$ 43	$ 37	$ —
Total realized and unrealized gains or losses:						
Included in selling, general and administrative and other expenses	—	—	(64)	—	—	(7)
Included in investment and other income, net	—	6	—	—	3	—
Included in other comprehensive (loss) income	—	7	—	—	8	—
Issuances	—	—	—	—	—	203
Purchases	—	7	—	—	111	—
Sales	—	—	—	—	—	—
Settlements	(5)	(129)	(46)	(3)	(34)	—
Transfers into Level 3	—	—	—	—	—	—
Transfers out of Level 3	—	—	—	—	—	—
Ending balance of Level 3	$ 35	$ 16	$ 86	$ 40	$ 125	$ 196

We recognize transfers into and out of levels within the fair value hierarchy at the end of the fiscal month in which the actual event or change in circumstances that caused the transfer occurs. Other investments and other liabilities included in Level 3 at September 30, 2018 and September 24, 2017 were comprised of convertible debt instruments issued by private companies and contingent consideration related to business combinations, respectively.

Nonrecurring Fair Value Measurements. We measure certain assets and liabilities at fair value on a nonrecurring basis. These assets and liabilities include cost and equity method investments when they are deemed to be other-than-temporarily impaired, assets acquired and liabilities assumed in an acquisition or in a nonmonetary exchange, and property, plant and equipment and intangible assets that are written down to fair value when they are held for sale or determined to be impaired. During fiscal 2018, we updated the business plans and related internal forecasts related to certain of our businesses, resulting in impairment charges to write down certain property, plant and equipment, intangible assets and goodwill (Note 10). We determined the fair values using cost, market and income approaches. The estimation of fair value and cash flows used in the fair value measurements required the use of significant unobservable inputs, and as a result, the fair value measurements were classified as Level 3. During fiscal 2018, 2017 and 2016, we did not have any other significant assets or liabilities that were measured at fair value on a nonrecurring basis in periods subsequent to initial recognition.

Note 12. Marketable Securities

Marketable securities were comprised as follows (in millions):

	Current		Noncurrent	
	September 30, 2018	September 24, 2017	September 30, 2018	September 24, 2017
Available-for-sale:				
U.S. Treasury securities and government-related securities	$ —	$ 23	$ —	$ 959
Corporate bonds and notes	144	2,014	—	271
Mortgage- and asset-backed and auction rate securities	—	93	35	40
Equity and preferred securities and equity funds	167	36	—	—
Debt funds	—	109	—	—
Total available-for-sale	311	2,275	35	1,270
Time deposits	—	4	—	—
Total marketable securities	$ 311	$ 2,279	$ 35	$ 1,270

At September 30, 2018, the contractual maturities of available-for-sale debt securities were as follows (in millions):

	September 30, 2018
Years to Maturity:	
Less than one year	$ 140
One to five years	4
No single maturity date	35
Total	$ 179

Debt securities with no single maturity date included auction rate securities.

We recorded realized gains and losses on sales of available-for-sale securities as follows (in millions):

	2018	2017	2016
Gross realized gains	$ 27	$ 553	$ 277
Gross realized losses	(6)	(127)	(37)
Net realized gains	$ 21	$ 426	$ 240

Available-for-sale securities were comprised as follows (in millions):

	September 30, 2018	September 24, 2017
Equity securities		
Cost	$ 104	$ 8
Unrealized gains	63	28
Fair value	167	36
Debt securities (including debt funds)		
Cost	179	3,497
Unrealized gains	—	13
Unrealized losses	—	(1)
Fair value	179	3,509
	$ 346	$ 3,545

In connection with the proposed NXP transaction (Note 9), we divested a substantial portion of our marketable securities portfolio in order to finance, in part, that transaction. Given our intention to sell certain marketable securities, we recorded other-than-temporary impairment losses in fiscal 2017 for certain marketable securities, and no additional losses were recorded in fiscal 2018. Marketable securities that were expected to be used to finance the NXP transaction were fully liquidated, a portion of which were used to fund the stock repurchase program (Note 4) with the remaining classified as cash and cash equivalents at September 30, 2018.

Note 13. Summarized Quarterly Data (Unaudited)

The following financial information reflects all normal recurring adjustments that are, in the opinion of management, necessary for a fair statement of the results of the interim periods.

The table below presents quarterly data for fiscal 2018 and 2017 (in millions, except per share data):

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2018 (1)				
Revenues	$ 6,068	$ 5,261	$ 5,599	$ 5,803
Operating income (loss) (2)	29	441	925	(654)
Net (loss) income (2)	(5,953)	363	1,219	(493)
Basic (loss) earnings per share (3):	$ (4.03)	$ 0.25	$ 0.82	$ (0.35)
Diluted (loss) earnings per share (3):	(4.03)	0.24	0.82	(0.35)
2017 (1)				
Revenues	$ 5,999	$ 5,016	$ 5,371	$ 5,905
Operating income	778	729	773	333
Net income	681	749	865	168
Net income attributable to Qualcomm	682	749	866	168
Basic earnings per share attributable to Qualcomm (3):	$ 0.46	$ 0.51	$ 0.59	$ 0.11
Diluted earnings per share attributable to Qualcomm (3):	0.46	0.50	0.58	0.11

(1) Amounts, other than per share amounts, are rounded to millions each quarter. Therefore, the sum of the quarterly amounts may not equal the annual amounts reported.

(2) Operating loss and net loss in the fourth quarter of fiscal 2018 were negatively impacted by a $2.0 billion charge related to the NXP termination fee. Net loss in the first quarter of fiscal 2018 was negatively impacted by a $5.9 billion provisional charge to income tax expense due to the effects of the Tax Legislation. Additionally, operating income and net loss in the first quarter of fiscal 2018 were negatively impacted by a $1.2 billion charge related to the EC fine.

(3) (Loss) earnings per share and earnings per share attributable to Qualcomm are computed independently for each quarter and the full year based upon respective average shares outstanding. Therefore, the sum of the quarterly (loss) earnings per share amounts may not equal the annual amounts reported.

SCHEDULE II

QUALCOMM INCORPORATED

VALUATION AND QUALIFYING ACCOUNTS

(In millions)

	Balance at Beginning of Period	Charged (Credited) to Costs and Expenses	Balance at End of Period
Year ended September 30, 2018			
Allowances:			
— trade receivables	$ 11	$ 45	$ 56
Valuation allowance on deferred tax assets	863	666	1,529
	$ 874	$ 711	$ 1,585
Year ended September 24, 2017			
Allowances:			
— trade receivables	$ 1	$ 10	$ 11
Valuation allowance on deferred tax assets	754	109	863
	$ 755	$ 119	$ 874
Year ended September 25, 2016			
Allowances:			
— trade receivables	$ 6	$ (5)	$ 1
Valuation allowance on deferred tax assets	635	119	754
	$ 641	$ 114	$ 755