[Table of Contents](#)

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, DC 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 October 30, 2022

OR

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

For the transition period from to

Broadcom Inc.

Delaware	1320 Ridder Park Drive San Jose, CA 95131-2313	001-38449	35-2617337
(State or Other Jurisdiction of Incorporation or Organization)		(Commission File Number)	(I.R.S. Employer Identification No.)

(408) 433-8000

(Exact Name of Registrant as Specified in Its Charter

Address of Principal Executive Offices, Including Zip Code

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, $0.001 par value	AVGO	The NASDAQ Global Select 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, a 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	☐	Sr

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 voting and non-voting common equity held by non-affiliates as of April 29, 2022, based upon the closing sale price of such shares on The Nasdaq Global Select Market on such date was approximately $220.1 billion.

As of November 25, 2022, there were 417,886,140 shares of our common stock outstanding.

Documents Incorporated by Reference

Portions of the registrant’s definitive Proxy Statement for its 2023 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K.

BROADCOM INC.
2022 ANNUAL REPORT ON FORM 10-K

TABLE OF CONTENTS

PART I

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws and particularly in Item 1: "Business," Item 1A: "Risk Factors," Item 3: "Legal Proceedings" and Item 7: "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Annual Report on Form 10-K. These statements are indicated by words or phrases such as "anticipate," "expect," "estimate," "seek," "plan," "believe," "could," "intend," "will," and similar words or phrases. These forward-looking statements may include projections of financial information; statements about historical results that may suggest trends for our business; statements of the plans, strategies, and objectives of management for future operations; statements of expectation or belief regarding future events (including any acquisitions we may make), technology developments, our products, product sales, expenses, liquidity, cash flow and growth rates, or enforceability of our intellectual property rights; any backlog; and the effects of seasonality on our business. Such statements are based on current expectations, estimates, forecasts and projections of our industry performance and macroeconomic conditions, based on management's judgment, beliefs, current trends and market conditions, and involve risks and uncertainties that may cause actual results to differ materially from those contained in the forward-looking statements. We derive most of our forward-looking statements from our operating budgets and forecasts, which are based upon many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results. Accordingly, we caution you not to place undue reliance on these statements. Material factors that could cause actual results to differ materially from our expectations are summarized and disclosed under "Risk Factors" in Part I, Item 1A of this Annual Report on Form 10-K.

Unless stated otherwise or the context otherwise requires, references to "Broadcom," "we," "our," and "us" mean Broadcom Inc. and its consolidated subsidiaries. Our fiscal year ends on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. We refer to our fiscal years by the calendar year in which they end. For example, the fiscal year ended October 30, 2022 was a 52-week year.

ITEM 1. BUSINESS

Overview

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Our over 50-year history of innovation dates back to our diverse origins from Hewlett-Packard Company, AT&T, LSI Corporation, Broadcom Corporation, Brocade Communications Systems LLC, CA, Inc. and Symantec Enterprise Security. Over the years, we have assembled a large team of semiconductor and software design engineers around the world. We maintain design, product and software development engineering resources at locations in the U.S., Asia, Europe and Israel, providing us with engineering expertise worldwide. We strategically focus our research and development resources to address niche opportunities in our target markets and leverage our extensive portfolio of U.S. and other patents, and other intellectual property ("IP") to integrate multiple technologies and create system-on-chip ("SoC") component and software solutions that target growth opportunities. We design products and software that deliver high-performance and provide mission critical functionality.

We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor ("CMOS") based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes ("STB"), broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. We differentiate ourselves through our high performance design and integration capabilities and focus on developing products for target markets where we believe we can earn attractive margins.

Our infrastructure software solutions enable customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms. Many of the largest companies in the world, including most of the Fortune 500, and many government agencies rely on our software solutions to help manage and secure their on-premise and hybrid cloud environments. Our portfolio of industry-leading infrastructure and security software is designed to modernize, optimize, and secure the most complex hybrid environments, enabling scalability, agility, automation, insights, resiliency and security. We also offer mission critical fibre channel storage area networking ("FC SAN") products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products.

Business Strategy

Our strategy is to combine best-of-breed technology leadership in semiconductor and infrastructure software solutions, with unmatched scale, on a common sales and administrative platform to deliver a comprehensive suite of infrastructure technology products to the world's leading business and government customers. We seek to achieve this through responsibly financed acquisitions of category-leading businesses and technologies, as well as investing extensively in research and development, to ensure our products retain their technology leadership. This strategy results in a robust business model designed to drive diversified and sustainable operating and financial results.

Products and Markets

Semiconductor Solutions

Semiconductors are made by imprinting a network of electronic components onto a semiconductor wafer. These devices are designed to perform various functions such as processing, amplifying and selectively filtering electronic signals, controlling electronic system functions and processing, and transmitting and storing data. Our digital and mixed signal products are based on silicon wafers with CMOS transistors offering fast switching speeds and low power consumption, which are both critical design factors for the markets we serve. We also offer analog products, which are based on III-V semiconductor materials that have higher electrical conductivity than silicon, and thus tend to have better performance characteristics in radio frequency (“RF”), and optoelectronic applications. III-V refers to elements from the 3rd and 5th groups in the periodic table of chemical elements. Examples of these materials used in our products are gallium arsenide (“GaAs”) and indium phosphide (“InP”).

We provide semiconductor solutions for managing the movement of data in data center, service provider, enterprise and embedded networking applications. We provide a broad variety of RF semiconductor devices, wireless connectivity solutions, custom touch controllers and inductive charging solutions for the wireless market. We also provide semiconductor solutions for enabling the STB and broadband access applications and for enabling secure movement of digital data to and from host machines, such as servers, personal computers and storage systems, to the underlying storage devices, such as hard disk drives (“HDD”) and solid-state drives (“SSD”).

Our product portfolio ranges from discrete devices to complex sub-systems that include multiple device types and may also incorporate firmware for interfacing between analog and digital systems. In some cases, our products include mechanical hardware that interfaces with optoelectronic or capacitive sensors. We focus on markets that require high quality and the technology leadership and integrated performance characteristic of our products. The table below presents our material semiconductor product families and their major end markets and applications during fiscal year 2022.

Major End Markets	Major Applications	Material Product Families
Broadband	• STB and Broadband Access	• STB SoCs • DSL/PON gateways • DOCSIS cable modem • DSLAM/PON optical line termination • Wi-Fi access point SoCs
Networking	• Data Center, Service Provider, Enterprise and Embedded Networking	• Ethernet switching and routing merchant silicon • Embedded processors and controllers • Custom silicon solutions • Optical and copper PHYs • Fiber optic transmitter and receiver components
Wireless	• Mobile Device Connectivity	• RF front end modules and filters • Wi-Fi, Bluetooth, GPS/GNSS SoCs • Custom touch controllers • Inductive charging ASICs
Storage	• Servers and Storage Systems	• SAS and RAID controllers and adapters • PCIe switches • Fibre channel host bus adapters • Ethernet NIC
	• HDD and SSD	• Read channel based SoCs; Custom flash controllers • Preamplifiers
Industrial	• Factory Automation, Renewable Energy and Automotive Electronics	• Optocouplers • Industrial fiber optics • Motion control encoders and subsystems • Light emitting diode • Ethernet PHYs, switch ICs and camera microcontrollers

Set-Top Box Solutions: We offer complete SoC platform solutions for cable, satellite, Internet Protocol television, over-the-top and terrestrial STBs. Our products enable global service providers to introduce new and enhanced technologies and services in STBs, including transcoding, digital video recording functionality, higher definition video processing, increased networking capabilities, and more tuners to enable faster channel change and more simultaneous recordings. We are also enabling service providers in deploying High Efficiency Video Coding ("HEVC"), a video compression format that is a successor to the H. 264/MPEG-4 format. HEVC enables ultra-high definition ("Ultra HD"), services by effectively doubling the capacity of existing networks to deploy new or existing content. Our families of STB solutions support the complete range of resolutions, from standard definition, to high definition, and Ultra HD.

Broadband Access Solutions: We offer complete SoC platform solutions for digital subscriber line ("DSL"), cable, passive optical networking ("PON") and wireless local area network for both consumer premise equipment ("CPE") and central office ("CO") deployments. Our CPE devices are used in broadband modems, residential gateways and Wi-Fi access points and routers. Our CO devices, including DSL Access Multiplexer ("DSLAM"), cable modem termination systems and PON optical line termination medium access controller, are empowering modern operator broadband infrastructure. Our products enable global service providers to continue to deploy next generation broadband access technologies across multiple standards, including G.fast, Data Over Cable Service Interface Specifications ("DOCSIS"), PON and Wi-Fi to provide more bandwidth and faster speeds to consumers.

Ethernet Switching & Routing: Ethernet is a ubiquitous interconnection technology that enables high performance and cost effective networking infrastructure. We offer a broad set of Ethernet switching and routing products that are optimized for data center, service provider network, enterprise network, and embedded network applications. In the data center market, our high capacity, low latency, switching silicon supports advanced protocols around virtualization and multi-pathing. Our Ethernet switching fabric technologies provide the ability to build highly scalable flat networks supporting tens of thousands of servers. Our service provider switch portfolio enables carrier/service provider networks to support a large number of services in the wireless backhaul, access, aggregation and core of their networks. For enterprise networks and embedded Ethernet applications, we offer product families that combine multi-layer switching capabilities and support lower power modes that comply with industry standards around energy efficient Ethernet.

Embedded Processors & Controllers: Our embedded processors leverage our ARM central processing unit and Ethernet switching technology to deliver SoCs for high performance embedded applications in a wide range of communication products such as voice-over-internet-protocol, telephony, point-of-sale devices and enterprise and retail access points and gateways. We offer a range of knowledge-based processors to enable high-performance decision-making for packet processing in a variety of advanced devices in the enterprise, metro, access, edge and core networking spaces. We also offer a range of Ethernet controllers for servers and storage systems supporting multiple generations of Ethernet technology.

Custom Silicon Solutions: We provide advanced technology and IP platforms for customers to design and develop application specific integrated circuits ("ASICs"), targeting data center compute offload, legacy and new 5G radio infrastructure, and wired communication networks. Our custom silicon provides the platform to integrate embedded logic, memory, serializer/deserializer ("SerDes") technology, IP cores and processor cores. The ASICs are custom products built to individual customers specifications.

Physical Layer Devices: These devices, also referred to as PHYs, are transceivers that enable the reception and transmission of Ethernet data packets over a physical medium such as copper wire or optical fibers. Our high performance Ethernet transceivers are built upon a proprietary digital signal processing communication architecture optimized for high-speed network connections and support the latest standards and advanced features, such as energy efficient Ethernet, data encryption and time synchronization. We also offer a range of automotive Ethernet products, including PHYs, switches and camera microcontrollers, to meet growing consumer demand for in-vehicle connectivity and smart vision.

Fiber Optic Components: We supply a wide array of optical components to the Ethernet networking, storage, and access, metro- and long-haul telecommunication markets. Our optical components enable the high speed reception and transmission of data through optical fibers.

RF Semiconductor Devices: Our RF semiconductor devices selectively filter, as well as amplify and route, RF signals. Filters enable modern wireless communication systems to support a large number of subscribers simultaneously by ensuring that the multiple transmissions and receptions of voice and data streams do not interfere with each other. We were among the first to deliver commercial film bulk acoustic resonator ("FBAR") filters that offer technological advantages over competing filter technologies, to allow mobile handsets to function more efficiently in today's congested RF spectrum. FBAR technology has a significant market share within the cellular handset market. Our RF products include multi-chip module front-end modules that integrate transmit/receive switching and filtering functions for multiple frequency bands, filter modules and discrete filters, all using our proprietary FBAR technology.

Our expertise in FBAR technology, amplifier design, and module integration enables us to offer industry-leading performance in cellular RF transceiver applications.

Connectivity Solutions: Our connectivity solutions include discrete and integrated Wi-Fi and Bluetooth solutions, and global positioning system/global navigation satellite system ("GPS/GNSS") receivers, designed for use in mobile devices including smartphones, tablets and wearable products.

Wi-Fi allows devices on a local area network to communicate wirelessly, adding the convenience of mobility to the utility of high-speed data networks. We offer a family of high performance, low power Wi-Fi chipsets. Bluetooth is a low power technology that enables direct connectivity between devices. We offer a complete family of Bluetooth silicon and software solutions that enable manufacturers to easily and cost-effectively add Bluetooth functionality to virtually any device. These solutions include combination chips that offer integrated Wi-Fi and Bluetooth functionality, which provides significant performance advantages over discrete solutions.

We also offer a family of GPS, assisted-GPS and GNSS semiconductor products, software and data services. These products are part of a broader location platform that leverages a broad range of communications technologies, including Wi-Fi, Bluetooth and GPS, to provide more accurate location and navigation capabilities.

Custom Touch Controllers: Our touch controllers process signals from touch screens in mobile handsets and tablets.

Inductive Charging ASICs: Our custom inductive charging ASIC devices offer high efficiency and are highly integrated solutions for mobile and wearable devices.

SAS, RAID & PCIe Products: We provide serial attached small computer system interface ("SAS") and redundant array of independent disks ("RAID") controller and adapter solutions to server and storage system original equipment manufacturers ("OEMs"). These solutions enable secure and high speed data transmission between a host computer, such as a server, and storage peripheral devices, such as HDD, SSD and optical disk drives and disk and tape-based storage systems. Some of these solutions are delivered as stand-alone semiconductors, typically as a controller. Other solutions are delivered as circuit boards, known as adapter products, which incorporate our semiconductors onto a circuit board with other features. RAID technology is a critical part of our server storage connectivity solutions as it provides protection against the loss of critical data resulting from HDD failures.

We also provide interconnect semiconductors that support the peripheral component interconnect express ("PCIe") communication standards. PCIe is the primary interconnection mechanism inside computing systems today.

Fibre Channel Products: We provide fibre channel host bus adapters, which connect host computers such as servers to FC SANs.

Ethernet Network Interface Card ("NIC") Controllers: Our Ethernet NIC controllers are designed for high-performance virtualization, intelligent flow processing, secure data center connectivity, and machine learning.

HDD & SSD Products: We provide read channel-based SoCs and preamplifiers to HDD OEMs. These are the critical chips required to read, write and protect data. An HDD SoC is an integrated circuit ("IC") that combines the functionality of a read channel, serial interface, memory and a hard disk controller in a small, high-performance, low-power and cost-effective package. Read channels convert analog signals that are generated by reading the stored data on the physical media into digital signals.

In addition, we sell preamplifiers, which are complex, high speed, mixed signal devices that enable writing and reading data to and from the HDD heads. The preamplifier interfaces with the SoC to provide the electronics data path in a HDD.

We also provide custom flash controllers to SSD OEMs. An SSD stores data in flash memory instead of on a hard disk, providing high speed access to the data. Flash controllers manage the underlying flash memory in SSDs, performing critical functions such as reading and writing data to and from the flash memory and performing error correction, wear leveling and bad block management.

Industrial End Markets: We also provide a broad variety of products for the general industrial and automotive markets, including optocouplers, industrial fiber optics, motion encoders, light emitting diode devices, and Ethernet ICs. Our industrial products are used in a diverse set of applications, spanning industrial automation, power generation and distribution systems, medical systems and equipment, defense and aerospace, and vehicle subsystems including those used in electric vehicle powertrain, infotainment and advanced driver assistance system.

Infrastructure Software

Our infrastructure software solutions enables customers greater choice and flexibility to build, run, manage, connect and protect applications at scale across diversified and distributed environments.

Our mainframe software provides market-leading DevOps, AIOps, Security and Data Management Systems solutions. We help enterprises embrace open tools and technologies, integrate their mainframe into their cloud infrastructures, and amplify the value of their mainframe investments. By partnering with our customers and providing creative value-added programs, we help customers overcome challenges related to skills development, technical education, strategy and planning, and the need for cloud-like pricing flexibility to support their overall business success with the platform.

Our distributed software solutions enable global enterprises to optimize the planning, development and delivery of software, powering their business critical digital services. Our solutions are designed to enable customers to innovate, improve customer experience, and drive profitability by aligning business, development, and operational teams. Our products, organized in the domains of ValueOps, DevOps, and AIOps, deliver end-to-end visibility across all stages of the digital lifecycle and help our customers realize better business outcomes and better experiences for their customers.

Our Symantec cyber security software solutions help organizations and governments secure against threats and compliance risks by protecting their users and data on any app, device, or network. Our integrated cyber defense approach simplifies cyber security with comprehensive solutions designed to secure critical business assets across on-premises and cloud infrastructures. Our Symantec solutions utilize rich threat intelligence from a global network of security engineers, threat analyst and researchers, as well as advanced artificial intelligence ("AI") and machine-learning engines, enabling customers to protect data, connect authorized users with trusted applications, and detect and respond to the most advanced targeted attacks.

We also offer mission critical FC SAN products designed to help customers reduce the cost and complexity of managing business information within a shared data storage environment, enabling high levels of availability of mission critical applications in the form of modules, switches and subsystems incorporating multiple semiconductor products. We deliver reliable and simplified management of these FC SAN products through our software-based management tools designed to maximize uptime, dramatically simplify storage area networking deployment and management, and provide high levels of visibility and insight into the storage network.

Table of Contents

The table below presents our software portfolios and their material offerings during fiscal year 2022.

Software Portfolio	Portfolio Description	Major Portfolio Offerings
Mainframe Software	• Solutions for DevOps, AIOps, Security and Database Management Systems	• Operational Analytics & Management • Automation • Database & Database Management • Application Development & Testing • Identity & Access Management • Compliance & Data Protection • Security Insights
Distributed Software	• Solutions that optimize the planning, development and delivery of business critical services	• ValueOps • DevOps • AIOps
Symantec Cyber Security	• Comprehensive threat protection and compliance solutions that secure against threats and compliance risks by protecting users and data on any app, device, or network	• Endpoint Security • Network Security • Information Security • Identity Security
FC SAN Management	• Solutions that transforms current storage networks with autonomous SAN capabilities	• Fibre Channel Switch
Payment Security	• Arcot payment authentication network powered by 3-D Secure	• Payment Security Suite

Operational Analytics & Management*:* These solutions combine big data, machine learning and AI with mainframe expertise to deliver meaningful and actionable insights to augment and automate day-to-day operations and deliver exceptional customer experiences.

Automation*:* These solutions reduce manual effort by enabling customers to proactively optimize resources and orchestrate automation across enterprise applications and systems.

Databases & Database Management*:* These high-performance databases and management tools store, organize, and manage mainframe data to ensure optimal performance, efficient administration, and reliability of critical systems.

Application Development & Testing*:* These solutions enable customers to accelerate software delivery while increasing code quality through the use of our agile processes and tools, and DevOps solutions. Our open-first strategy helps customers modernize their mainframe environment through the use of open source and open application programming technologies across people, process, tooling and applications, resulting in greater synergy and alignment with their corporate information technology ("IT").

Identity & Access Management*:* These solutions manage mainframe access and elevate it with modern practices such as multi-factor authentication, managing access for privileged users, and supporting all external security managers.

Compliance & Data Protection*:* These solutions locate and protect sensitive mainframe data to ensure compliance and identify risk, identify and proactively respond to potential risks and bad actors, and reduce risk and lighten security management load with automated identification and authorization cleanup.

Security Insights Platform*:* This solution helps ensure a trusted environment for customers and their employees by quickly interpreting and assessing mainframe security posture, identifying risks and developing remediation steps on an ongoing and ad hoc basis. This data is available for use with in-house tools for security information and event management.

ValueOps*:* This solution delivers value stream management capabilities that enable customers to schedule, track, and manage work throughout its lifecycle from investment planning to execution. It aligns business and development teams across the enterprise, increasing transparency, reducing inefficiencies, and improving time to value.

DevOps: This solution offers capabilities that empower users of our agile processes and tools to track development progress and deploy releases confidently with assurance of feature completeness, high-quality and reduced risk. Key stakeholders have a single view of key insights into release progress, health, quality, and defect trends, and metrics that drive focus, gauge readiness, and help to ensure successful, quality releases.

AIOps: This solution combines application, infrastructure and network monitoring and correlation with intelligent remediation capabilities to help customers create more resilient production environments and improve customer experience.

Endpoint Security: Endpoints are the critical last line of defense against cyber attackers. Our Symantec endpoint security solutions prevent, detect and respond to emerging threats across all devices and operating systems including laptops, desktops, tablets, mobile phones, servers and cloud workloads through an intelligent AI driven security console and single agent.

Network Security: Email and web access are the lifeblood and essential communication means for every modern organization. We have a full array of network security solutions, as well as a shared set of advanced threat protection technologies to stop inbound and outbound threats targeting end users, information and key infrastructure.

Information Security: Information protection and compliance is critical to managing risk. We offer integrated information security solutions, based on an efficient, single-policy that can be applied across the entire environment, to help organizations identify and protect risky users, applications and their most sensitive data everywhere across endpoints, on-premises networks, cloud services and private applications.

Identity Security: User identities are under attack by cyber criminals hoping to exploit their access and privileges and do harm. We mitigate these attacks by positively identifying legitimate users, enforcing granular access control policies, and streamlining access governance to prevent unauthorized access to sensitive resources and data.

Fibre Channel Switch Products: Our Brocade Fibre Channel switch products provide interconnection, bandwidth and high-speed switching between servers and storage devices which are in a FC SAN. FC SANs are networks dedicated to mission critical storage traffic, and enable simultaneous high speed and secure connections among multiple host computers and multiple storage arrays.

Payment Security Suite: This is a software as a service ("SaaS")-based payment authentication service to help banks and merchants protect against fraud and ensure a hassle-free online shopping experience for their customers.

Research and Development

We are committed to continuous investment in product development and enhancement, with a focus on rapidly introducing new, proprietary products and releases. Many of our products have grown out of our own research and development efforts, and have given us competitive advantages in certain target markets due to performance differentiation. However, we opportunistically seek to enhance our capabilities through the acquisition of engineers with complementary research and development skills and complementary technologies and businesses. We focus our research and development efforts on the development of mission critical, innovative, sustainable and higher value product platforms and those that improve the quality and stability in our broadly deployed products. We leverage our design capabilities in markets where we believe our innovation and reputation will allow us to earn attractive margins by developing high value-add products.

We plan to continue investing in product development, both organically and through acquisitions, to drive growth in our business. We also invest in process development and improvements to product features and functions, as well as fabrication capabilities to optimize processes for devices that are manufactured internally. Our field application engineers, design engineers, and product and software development engineers are located in many places around the world, and in many cases near our top customers. This enhances our customer reach and our visibility into new product opportunities and, in the case of our semiconductor customers, enables us to support our customers in each stage of their product development cycle, from the early stages of production design to volume manufacturing and future growth. By collaborating with our customers, we have opportunities to develop high value-added, customized products for them that leverage our existing technologies. We anticipate that we will continue to make significant research and development expenditures in order to maintain our competitive position, and to ensure a continuous flow of innovative and sustainable product platforms.

Customers, Sales and Distribution

We sell our products through our direct sales force and a select network of distributors and channel partners globally. Distributors and OEMs, or their contract manufacturers, typically account for the substantial majority of our semiconductor sales. A relatively small number of customers account for a significant portion of our net revenue. Sales to distributors accounted for 56% and 53% of our net revenue for fiscal years 2022 and 2021, respectively. We believe aggregate sales to our top five end customers, through all channels, accounted for approximately 35% of our net revenue for each of our fiscal years 2022 and 2021. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 20% of our net revenue for each of fiscal years 2022 and 2021. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

Many of our semiconductor customers design products in North America or Europe that are then manufactured in Asia. To serve customers around the world, we have strategically developed relationships with large global electronic component distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges. We also sell our products to a wide variety of OEMs or their contract manufacturers. We have established strong relationships with leading OEM customers across multiple target markets. Our direct sales force focuses on supporting our large OEM customers, and has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer's organization. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers. Many of our major customer relationships have been in place for many years and are often the result of years of collaborative product development. This has enabled us to build our extensive IP portfolio and develop critical expertise regarding our customers' requirements, including substantial system-level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. Many of our customers and their contract manufacturers often require time critical delivery of our products to multiple locations around the world. With sales offices located in various countries, our primary warehouse in Malaysia, and dedicated regional customer support call centers, where we address customer issues and handle logistics and other order fulfillment requirements, we believe we are well-positioned to support our customers throughout the design, technology transfer and manufacturing stages across all geographies.

Our software customers are in most major industries worldwide, including banks, insurance companies, other financial services providers, government agencies, global IT service providers, telecommunication providers, transportation companies, manufacturers, technology companies, retailers, educational organizations and health care institutions. Our customers generally consist of large enterprises that have computing environments from multiple vendors and are highly complex. We remain focused on strengthening relationships and increasing penetration within our existing core, mainframe-centric, and Symantec endpoint customers and expanding the adoption of our enterprise software offerings with these customers. We believe our enterprise-wide license model will continue to offer our customers reduced complexity, more flexibility and an easier renewal process that will help drive revenue growth.

Manufacturing Operations

We focus on maintaining an efficient global supply chain and a variable, low-cost operating model. Accordingly, we outsource a majority of our manufacturing operations, utilizing third-party foundry and assembly and test capabilities, as well as some of our corporate infrastructure functions. The majority of our front-end wafer manufacturing operations is outsourced to external foundries, including Taiwan Semiconductor Manufacturing Company Limited ("TSMC"). We use third-party contract manufacturers for a significant majority of our assembly and test operations, including Advanced Semiconductor Engineering, Inc., Foxconn Technology Group, Amkor Technology, Inc. and Siliconware Precision Industries Co., Ltd. We use our internal fabrication facilities for products utilizing our innovative and proprietary processes, such as our FBAR filters for wireless communications and our vertical-cavity surface emitting laser and side emitting lasers-based on GaAs and InP lasers for fiber optic communications, while outsourcing commodity processes such as standard CMOS. By doing so, we can protect our IP and accelerate time to market for our products. The majority of our internal III-V semiconductor wafer fabrication is done in the U.S. and Singapore.

We also have a long history of operating in Asia where we manufacture and source the majority of our products and materials. We store the majority of our product inventory in our warehouse in Malaysia and our presence in Asia places us in close proximity to many of our customers' manufacturing facilities.

Manufacturing Materials and Suppliers

Our manufacturing operations employ a wide variety of semiconductors, electromechanical components and assemblies and raw materials. We purchase materials from hundreds of suppliers on a global basis. These purchases are generally on a purchase order basis and some parts are not readily available from alternate suppliers due to their unique design or the length of time and cost necessary for re-design or qualification. To address the potential disruption in our supply chain, we may use a number of techniques, including redesigning products for alternative components, making incremental or “lifetime” purchases, or qualifying more than one source of supply. Our long-term relationships with our suppliers allow us to proactively manage our technology development and product discontinuance plans, and to monitor our suppliers' financial health. Some suppliers may, nonetheless, extend their lead times, limit supplies, increase prices or cease to produce necessary parts for our products. If these are unique or highly specialized components, we may not be able to find a substitute quickly, or at all.

Competition

The markets in which we participate are highly competitive. Our competitors range from large, international companies offering a wide range of products to smaller companies specializing in narrow markets. The competitive landscape is changing as a result of a trend toward consolidation within many industries, as some of our competitors have merged with or been acquired by other competitors, while others have begun collaborating with each other. We expect this consolidation trend to continue. We expect competition in the markets in which we participate to continue to increase as existing competitors improve or expand their product offerings and as new companies enter the market. Additionally, our ability to compete effectively depends on a number of factors, including: quality, technical performance, price, product features, product system compatibility, system-level design capability, engineering expertise, responsiveness to customers, new product innovation, product availability, delivery timing and reliability, and customer sales and technical support.

In the semiconductor market, we compete with integrated device manufacturers, fabless semiconductor companies, as well as the internal resources of large, integrated OEMs. Our primary competitors are Amlogic Inc., Analog Devices, Inc., Advanced Micro Devices, Inc., Cisco Systems, Inc., Wolfspeed, Inc. (f/k/a Cree, Inc.), GlobalFoundries Inc., Hamamatsu Photonics K.K., Heidenhain Corporation, HiSilicon Technologies Co. Ltd., iC-Haus GmbH, Intel Corporation, Lumentum Holdings Inc., MACOM Technology Solutions Holdings, Inc., MaxLinear, Inc., Marvell Technology, Inc., MediaTek Inc., NVIDIA Corporation, Microchip Technology Incorporated, Mitsubishi Electric Corporation, Murata Manufacturing Co., Ltd., NXP Semiconductors N.V., ON Semiconductor Corporation, OSRAM Licht AG, Qorvo, Inc., Qualcomm Inc., Realtek Semiconductor Corp., Renesas Electronics Corporation, Skyworks Solutions, Inc., STMicroelectronics N.V., Sumitomo Corporation, Synaptics Incorporated, TDK-EPC Corporation, Toshiba Corporation, Texas Instruments, Inc. and II-VI Incorporated. We compete based on the strength and expertise of our high speed proprietary design expertise, FBAR technology, amplifier design, module integration, proprietary materials processes, multiple storage protocols and mixed-signal design, our broad product portfolio, support of key industry standards, reputation for quality products, and our customer relationships.

In the infrastructure software market, we compete with large enterprise software vendors who continue to expand their product and service offerings and consolidate offerings into broad product lines, and smaller, niche players focused on specific markets. Our primary competitors are Atlassian Corporation, Plc, BMC Software Inc., BeyondTrust Corporation, Cisco Systems, Inc., CrowdStrike Holdings, Inc., CyberArk Software, Ltd., International Business Machines Corporation, Micro Focus International plc, Microsoft Corporation, New Relic, Inc., Oracle Corporation, Proofpoint, Inc., Rocket Software, Inc., SailPoint Technologies Holdings, Inc., Salesforce.com, Inc., ServiceNow, Inc., SolarWinds Corporation, Splunk, Inc. and Zscaler, Inc. We compete based on our breadth of portfolio of enterprise management tools, breadth and synergy of offerings, our platform and hardware independence, our global reach, and our deep customer relationships and industry experience.

Intellectual Property

Our success depends in part upon our ability to protect our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks, service marks, trade secrets and similar IP, as well as customary contractual protections with our customers, suppliers, employees and consultants, and through security measures to protect our trade secrets. We believe our current product expertise, key engineering talent and IP portfolio provide us with a strong platform from which to develop application specific products in key target markets.

As of October 30, 2022, we had 17,035 U.S. and other patents and 618 U.S. and other pending patent applications. The expiration dates of our patents range from 2022 to 2041, with a small number of patents expiring in the near future, none of which are expected to be material to our IP portfolio. We are not substantially dependent on any single patent or group of related patents.

We focus our patent application program to a greater extent on those inventions and improvements that we believe are likely to be incorporated into our products, as contrasted with more basic research. However, we do not know how many of our pending patent applications will result in the issuance of patents or the extent to which the examination process could require us to narrow our claims.

We and our predecessors have also entered into a variety of IP licensing and cross-licensing arrangements that have both benefited our business and enabled some of our competitors. A portion of our revenue comes from IP licensing royalty payments and from litigation settlements relating to such IP. We also license third-party technologies that are incorporated into some elements of our design activities, products and manufacturing processes. Historically, licenses of the third-party technologies used by us have generally been available to us on acceptable terms.

The industries in which we compete are characterized by the existence of a large number of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including by patent holding companies that do not make or sell products. Some of our customer agreements require us to indemnify our customers for third-party IP infringement claims arising from our products. Claims of this sort could harm our relationships with our customers and might deter future customers from doing business with us. With respect to any IP rights claims against us or our customers or distributors, we may be required to defend ourselves or our customers or distributors in litigation, cease manufacturing the infringing products, pay damages, expend resources to develop non-infringing technology, seek a license which may not be available on commercially reasonable terms or at all, or relinquish patents or other IP rights.

With respect to our infrastructure software, the proprietary portions of our source code for our products are protected both as a trade secret and as copyrighted works. Except with respect to software components that are subject to open source licenses, our customers do not generally have access to the source code for our products. Rather, on-premise customers typically access only the executable code for our products, and SaaS customers access only the functionality of our SaaS offerings. Under certain contingent circumstances, some of our customers are beneficiaries of a source code escrow arrangement that would enables them to obtain a limited right to access and use our source code if specific conditions are met.

Employees

Our success depends on our continued ability to attract, motivate and retain our workforce. As the source of our technological and product innovations, our engineering and technical personnel are a significant asset. Competition for these and other talented employees is significant in many locations where we operate, such as Silicon Valley and Southeast Asia.

We measure our employees’ engagement by our voluntary attrition rate and employee feedback. Our global voluntary attrition rate in fiscal year 2022 was approximately 6.5%, below the technology industry benchmark (AON, 2022 Salary Increase and Turnover Study — Second Edition, September 2022).

We also track the portion of our workforce in research and development roles. As of October 30, 2022, we had approximately 20,000 employees worldwide, with approximately 63% in research and development roles. By geography, approximately 54% of our employees are located in North America, 35% in Asia, and 11% in Europe, the Middle East and Africa.

Governmental Regulation

Our semiconductor manufacturing operations and research and development involve the use of hazardous substances and are regulated under international, federal, state and local laws governing health, safety and the environment. These regulations include limitations on discharge of pollutants to air, water, and soil; remediation requirements; product chemical content limitations; manufacturing chemical use and handling restrictions; pollution control requirements; waste minimization considerations; and treatment, transport, storage and disposal of solid and hazardous wastes. We are also subject to regulation by the U.S. Occupational Safety and Health Administration and similar health and safety laws in other jurisdictions.

We believe that our properties and operations at our facilities comply in all material respects with applicable environmental laws and worker health and safety laws. However, the risk of environmental liabilities cannot be completely eliminated and there can be no assurance that the application of environmental, health and safety laws to our business will not require us to incur significant expenditures.

We are also regulated under a number of international, federal, state and local laws regarding recycling, product packaging and product content requirements, including legislation enacted in the U.S., European Union and China, among a growing number of jurisdictions, which have placed greater restrictions on the use of lead, among other restricted substances, in electronic products, which affects materials composition and semiconductor packaging. In addition, our business is subject to various import/export regulations, such as the U.S. Export Administration Regulations, and applicable executive orders, and rules of industrial standards bodies, like the International Organization for Standardization, as well as regulation by other agencies, such as the U.S. Federal Trade Commission (“FTC”). These laws, regulations and orders are complex, may change frequently and with limited notice, have generally and may continue to become more stringent over time. We may incur significant expenditures in future periods as a result.

Seasonality

Historically, our net revenue has typically been higher in the second half of the fiscal year than in the first half, primarily due to seasonality in our wireless communications products. These products have historically experienced seasonality due to launches of new mobile devices manufactured by our OEM customers. However, from time to time, typical seasonality and industry cyclicality are overshadowed by other factors such as wider macroeconomic effects, the timing of significant product transitions and launches by large

OEMs, particularly with our wireless communications products. We have a diversified business portfolio and we believe that our overall revenue is less susceptible to seasonal variations as a result of this diversification.

Other Information

Our website is www.broadcom.com. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and other reports (and amendments thereto) filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act") with the Securities and Exchange Commission (the "SEC"), as well as proxy statements filed by Broadcom, free of charge at the "Investor Center - SEC Filings" section of our website at www.broadcom.com, as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Such periodic reports, proxy statements and other information are also available at the SEC's website at www.sec.gov. The reference to our website address does not constitute incorporation by reference of the information contained on or accessible through our website.

Information About Our Executive Officers

The following table provides information regarding our executive officers as of December 16, 2022:

Name and Title	Age	Position and Offices
Hock E. Tan	71	President, Chief Executive Officer and Director
Kirsten M. Spears	58	Chief Financial Officer and Chief Accounting Officer
Mark D. Brazeal	54	Chief Legal and Corporate Affairs Officer
Charlie B. Kawwas, Ph.D.	52	President, Semiconductor Solutions Group

Hock E. Tan has served as our President and Chief Executive Officer since March 2006. He held several executive leadership positions at Integrated Circuit Systems, Inc., a publicly traded timing solutions IC company, including President and Chief Executive Officer from 1999 until its acquisition by Integrated Device Technology, Inc. in 2005, Chief Operating Officer from 1996 to 1999 and Senior Vice President and Chief Financial Officer from 1995 to 1999. He was Vice President of Finance at Commodore International, Ltd. from 1992 to 1994, and held senior management positions at PepsiCo, Inc. and General Motors Corporation. He was also managing director of Pacven Investment, Ltd., a venture capital fund in Singapore, from 1988 to 1992, and was managing director of Hume Industries Ltd. in Malaysia from 1983 to 1988.

Kirsten M. Spears has served as our Chief Financial Officer and Chief Accounting Officer since December 2020. She served as our Principal Accounting Officer from March 2016 to December 2020 and Vice President and Corporate Controller from May 2014 to December 2020. She was Vice President and Corporate Controller at LSI Corporation from 2007 until its acquisition by us in 2014. She held several management positions in accounting and reporting at LSI from 1997 to 2007. She also worked for PriceWaterhouseCoopers prior to joining LSI.

Mark D. Brazeal has served as our Chief Legal and Corporate Affairs Officer since December 2021. He served as our Chief Legal Officer from March 2017 to December 2021. He was Chief Legal Officer and Senior Vice President, IP Licensing for SanDisk Corporation from 2014 until its acquisition by Western Digital Corporation in 2016. He held several senior legal positions at Broadcom Corporation from 2000 to 2014, including Senior Vice President and Senior Deputy General Counsel in charge of all commercial, operational, IP licensing and litigation matters. He was also an attorney in the transactional and IP groups at the law firms of Wilson Sonsini Goodrich & Rosati, Yuasa & Hara and Howrey & Simon prior to joining Broadcom Corporation.

Charlie B. Kawwas has served as our President, Semiconductor Solutions Group since July 2022. He served as our Chief Operating Officer from December 2020 to July 2022, Senior Vice President and Chief Sales Officer from June 2015 to December 2020 and Senior Vice President, Worldwide Sales from May 2014 to June 2015. He was head of worldwide sales at LSI Corporation from 2010 until its acquisition by us in 2014. He held several executive leadership positions at LSI from 2007 to 2010, including Vice President of Sales and Marketing for the networking division and Vice President of Marketing for the networking and storage products group. He was also the leader of Product Line Management for the Optical Ethernet and Multi-service Edge portfolio at Nortel Networks Corporation prior to joining LSI.

ITEM 1A. RISK FACTORS

Our business, operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock. Many of the following risks and uncertainties are, and may continue to be, exacerbated by the COVID-19 pandemic. The following material factors, among others, could cause our actual results to differ materially from historical results and those expressed in forward-looking statements made by us or on our behalf in filings with the SEC, press releases, communications with investors and oral statements.

Risk Factors Summary

The following is a summary of the principal risks that could adversely affect our business, operations and financial results.

Risks Related to Our Business

- Adverse global economic conditions could have a negative effect on us.
- We operate in the highly cyclical semiconductor industry.
- The majority of our sales come from a small number of customers and a reduction in demand or loss of one or more of our significant customers may adversely affect our business.
- Dependence on contract manufacturing and suppliers of critical components within our supply chain may adversely affect our ability to bring products to market.
- We purchase a significant amount of the materials used in our products from a limited number of suppliers.
- Our business is subject to various governmental regulations and trade restrictions. Compliance with these regulations may cause us to incur significant expense and, if we fail to maintain compliance, we may be forced to cease manufacture and distribution of certain products or subjected to administrative proceedings and civil or criminal penalties.
- Global political and economic conditions and other factors related to our international operations could adversely affect us.
- The COVID-19 pandemic has disrupted normal business activity.
- We are subject to risks associated with our distributors and other channel partners, including product inventory levels and product sell-through.
- Our dependence on senior management and if we are unable to attract and retain qualified personnel, we may not be able to execute our business strategy effectively.
- The failure to complete or realize the expected benefits of our acquisition of VMware, Inc. (“VMware Merger”) may adversely affect our business and our stock price.
- We may pursue acquisitions, investments, joint ventures and dispositions, which could adversely affect our results of operations.
- We may be involved in legal proceedings, including IP, securities litigation, and employee-related claims.
- Our operating results are subject to substantial quarterly and annual fluctuations.
- Failure to adjust our manufacturing and supply chain to accurately meet customer demand could adversely affect our results of operations.
- Winning business in the semiconductor solutions industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.
- Competition in our industries could prevent us from growing our revenue.

- A prolonged disruption of our manufacturing facilities, research and development facilities, warehouses or other significant operations, or those of our suppliers, could have a material adverse effect on us.
- We may be unable to maintain appropriate manufacturing capacity or product yields at our own manufacturing facilities.
- An impairment of the confidentiality, integrity, or availability of our IT systems, or those of one or more of our corporate infrastructure vendors, could have a material adverse effect on our business.
- Our ability to maintain or improve gross margin.
- Our ability to protect the significant amount of IP in our business.
- Incompatibility of our software products with operating environments, platforms, or third-party products, demand for our products and services could decrease.
- Failure to enter into software license agreements on a satisfactory basis could adversely affect us.

- Licensed third party software used in our products may not be available to us in the future, which may delay product development and production or cause us to incur additional expense.
- Use of open source code sources, which, under certain circumstances could materially adversely affect us.
- Failure of our software products to manage and secure IT infrastructures and environments could have a material adverse effect on our business.
- We are subject to warranty claims, product recalls and product liability.
- The complexity of our products could result in unforeseen delays or expense or undetected defects or bugs.
- We make substantial investments in research and development and unsuccessful investments could materially adversely affect our business, financial condition and results of operations.
- We collect, use, store, or otherwise process personal information, which subjects us to privacy and data security laws and contractual commitments, and our actual or perceived failure to comply with such laws and commitments could harm our business.
- We are subject to environmental, health and safety laws, which could increase our costs, restrict our operations and require expenditures.
- Social and environmental regulations, policies and provisions, as well as customer and investor demands, may make our supply chain more complex and may adversely affect our relationships with customers and investors.
- The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future.
- Fluctuations in foreign exchange rates could result in losses.

Risks Relating to Taxes

- Changes in tax legislation or policies could materially impact our financial position and results of operations.
- Our corporate income taxes could significantly increase if we are unable to maintain our tax concessions or if our assumptions and interpretations regarding tax laws and concessions prove to be incorrect.
- Our income taxes and overall cash tax costs are affected by a number of factors that could materially, adversely affect financial results.

Risks Relating to Our Indebtedness

- Our substantial indebtedness could adversely affect our financial health and our ability to execute our business strategy.
- The instruments governing our indebtedness impose certain restrictions on our business.
- Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flows from our business to pay our substantial debt.

Risks Relating to Owning Our Common Stock

- Volatility of our stock price could result in substantial losses for our investors as well as class action litigation against us and our management.
- The amount and frequency of our stock repurchases may fluctuate.
- A substantial amount of our stock is held by a small number of large investors.
- There can be no assurance that we will continue to declare cash dividends.

For a more complete discussion of the material risks facing our business, see below.

Risks Related to Our Business

Adverse global economic conditions could have a negative effect on our business, results of operations and financial condition and liquidity.

A general slowdown in the global economy, including a recession, or in a particular region or industry, an increase in trade tensions with U.S. trading partners, inflation or a tightening of the credit markets could negatively impact our business, financial condition and liquidity. Adverse global economic conditions have from time to time caused or exacerbated significant slowdowns in the industries and markets in which we operate, which have adversely affected our business and results of operations. Macroeconomic weakness and uncertainty also make it more difficult for us to accurately forecast revenue, gross margin and expenses, and may make it more difficult to raise or refinance debt. An escalation of trade tensions between the U.S. and China has resulted in trade restrictions and increased tariffs that harm our ability to participate in Chinese markets or compete effectively with Chinese companies. Sustained uncertainty about, or worsening of, current global economic conditions and further escalation of trade tensions between the U.S. and its trading partners, especially China, and possible decoupling of the U.S. and China economies, could result in a global economic slowdown and long-term changes to global trade. Such events may also (i) cause our customers and consumers to reduce, delay or forgo technology spending, (ii) result in customers sourcing products from other suppliers not subject to such restrictions or tariffs, (iii) lead to the insolvency or consolidation of key suppliers and customers, and (iv) intensify pricing pressures. Any or all of these factors could negatively affect demand for our products and our business, financial condition and results of operations.

We operate in the highly cyclical semiconductor industry.

The semiconductor industry is highly cyclical and is characterized by price erosion, wide fluctuations in product supply and demand, constant and rapid technological change, evolving technical standards, frequent new product introductions, and short product life cycles (for semiconductors and for many of the end products in which they are used). From time to time, these factors, together with changes in general economic conditions, cause significant upturns and downturns in the industry in general, and in our business in particular. The industry recently experienced a significant upturn due to the supply imbalance that resulted in record profitability and increases in average selling prices. It is possible that this recent industry up-cycle will be followed by a downturn, and historically, such down-cycles have been characterized by diminished demand for end-user products, high inventory levels and periods of inventory adjustment, under-utilization of manufacturing capacity, changes in revenue mix, accelerated erosion of average selling prices and elimination of expedite fees leading to reduced profitability and a decline in our stock price. The Creating Helpful Incentives to Produce Semiconductors for America Act could also result in an increase in supply leading to excess inventory and a decrease in 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 industry or market downturns, our net revenue may decline and our financial condition and results of operations may suffer.

The majority of our sales come from a small number of customers and a reduction in demand or loss of one or more of our significant customers may adversely affect our business.

We are dependent on a small number of end customers, OEMs, their respective contract manufacturers ("CMs"), and certain distributors for a majority of our business and revenue. For fiscal year 2022, sales to distributors accounted for 56% of our net revenue. We believe aggregate sales, through all channels, to Apple and our top five end customers, accounted for approximately 20% and 35% of our net revenue for fiscal year 2022, respectively. This customer concentration increases the risk of quarterly fluctuations in our operating results and our sensitivity to any material, adverse developments experienced by our significant customers.

Our semiconductor customers are not generally required to purchase specific quantities of products. Even when customers agree to source an agreed portion of their product needs from us, such arrangements often include pricing schedules or methodologies that apply regardless of the volume of products purchased, and those customers may not purchase the amount of product we expect. As a result, we may not generate the amount of revenue or achieve the level of profitability we expect under such arrangements. Moreover, our top customers' purchasing power has, in some cases, given them the ability to make greater demands on us with regard to pricing and contractual terms in general. We expect this trend to continue, which may adversely affect our gross margin on certain products and, should we fail to perform under these arrangements, we could also be liable for significant monetary damages.

The loss of, or any substantial reduction in sales to, any of our top customers could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Dependence on contract manufacturing and suppliers of critical components within our supply chain may adversely affect our ability to bring products to market, damage our reputation and adversely affect our results of operations.

We operate a primarily outsourced manufacturing business model that principally utilizes CMs, such as third-party wafer foundries and module assembly and test capabilities. Our semiconductor products require wafer manufacturers with state-of-the-art fabrication equipment and techniques, and most of our products are designed to be manufactured in a specific process, typically at one particular fab or foundry, either our own or with a particular CM.

We depend on our CMs to allocate sufficient manufacturing capacity to meet our needs, to produce products of acceptable quality at acceptable yields, and to deliver those products to us on a timely basis. We do not generally have long-term capacity commitments with our CMs and substantially all of our manufacturing services are on a purchase order basis with no minimum quantities. Further, our CMs may fail to timely develop new, advanced manufacturing processes, including transitions to smaller geometry process technologies or, from time to time, will cease to, or will become unable to, manufacture a component for us. As lead times to identify, qualify and establish reliable production at acceptable yields with a new CM is typically lengthy, there is often no readily available alternative source and there may be other constraints on our ability to change CMs. In addition, qualifying new CMs is often expensive, and they may not produce products as cost-effectively as our current suppliers.

TSMC, one of our CMs, manufactured approximately 90% of the wafers manufactured by our CMs during fiscal year 2022. We believe our wafer requirements represent a meaningful portion of TSMC’s total production capacity. However, TSMC also fabricates wafers for other companies, including some of our competitors, and could choose or be required to prioritize capacity for other customers or reduce or eliminate deliveries to us on short notice. In addition, TSMC has, and may in the future, raise their prices to us.

If any of the foregoing circumstances occur, we may be unable to meet our customer demand, or to the same extent as our competitors, fail to meet our contractual obligations or forgo revenue opportunities. This has in the past damaged, and may in the future damage our relationships with our customers. This could also result in litigation for alleged failure to meet our obligations, payment of significant damages, and our net revenue could decline, adversely affecting our business, financial condition, results of operations and gross margin.

Further, any substantial disruption in the contract manufacturing services that we utilize, including TSMC’s supply of wafers to us, as a result of a natural disaster, climate change, water shortages, political unrest, military conflicts, geopolitical turmoil, trade tensions, government orders, medical epidemics, such as the COVID-19 pandemic, economic instability, equipment failure or other cause, could materially harm our business, customer relationships and results of operations.

We purchase a significant amount of the materials used in our products from a limited number of suppliers.

Our manufacturing processes and those of our CMs rely on many materials, including silicon, GaAs and InP wafers, copper lead frames, precious and rare earth metals, mold compound, ceramic packages and various chemicals and gases. During fiscal year 2022, we purchased approximately two-thirds of our manufacturing materials from five materials providers, some of which are single source suppliers. As certain materials are highly specialized, the lead time needed to identify and qualify a new supplier is typically lengthy and there is often no readily available alternative source. We do not generally have long-term contracts with our materials providers and substantially all of our purchases are on a purchase order basis. Suppliers may extend lead times, limit supplies, place products on allocation or increase prices due to commodity price increases, capacity constraints, inflation, or other factors, any of which could lead to interruption of supply or increased demand in the industry. For example, due to the COVID-19 pandemic, we have experienced some supply constraints and increases in prices, including with respect to wafers and substrates. Additionally, the supply of these materials may be negatively impacted by increased trade tensions between the U.S. and its trading partners, particularly China. The supply constraints have had, and may continue to have, a negative impact on our customer relationships. Further, continued supply constraints for these or any other reasons could result in loss of revenue opportunities and adversely impact our business, financial condition and results of operations.

Our business is subject to various governmental regulations, and compliance with these regulations may cause us to incur significant expense. If we fail to maintain compliance with applicable regulations, we may be forced to cease the manufacture and distribution of certain products, and we could be subject to administrative proceedings and civil or criminal penalties.

Our business is subject to various domestic and international laws and other legal requirements, including anti-competition and import/export regulations, such as the U.S. Export Administration Regulations, and applicable executive orders. These laws, regulations and orders are complex, may change frequently and with limited notice, and have generally and may continue to become more stringent over time. We may be required to incur significant expense to comply with, or to remedy violations of, these regulations. In addition, if our customers fail to comply with these regulations, we may be required to suspend sales to these customers, which could damage our reputation and negatively impact our results of operations. The U.S. government may also add companies to its restricted entity list and/or technologies to its list of prohibited exports to specific countries, which have had and will continue to have an adverse effect on our ability to sell our products and our revenue. For example, Huawei Technologies Co., Ltd., one of our customers, is subject to certain U.S. export restrictions, which has required us to suspend sales to Huawei until we obtain licenses from the U.S. Department of Commerce. We may be unable to obtain or maintain the necessary licenses to allow us to export products to them. These restrictive governmental actions and any similar measures that may be imposed on U.S. companies by other governments, especially in light of ongoing trade tensions with China, will likely limit or prevent us from doing business with certain of our customers or suppliers and harm our ability to compete effectively or otherwise negatively affect our ability to sell our products, and adversely affect our business and results of operations.

Our products and operations are also subject to regulation by U.S. and non-U.S. regulatory agencies, such as the FTC. From time to time, we may also be involved or required to participate in regulatory investigations or inquiries, such as the ongoing investigation by the Korean Fair Trade Commission into certain of our contracting and business practices, which may evolve into legal or other administrative proceedings. Growing public concern over concentration of economic power in corporations is likely to result in increased anti-competition legislation, regulation, administrative rule making, and enforcement activity. Involvement in regulatory investigations or inquiries, can be costly, lengthy, complex and time consuming, diverting the attention and energies of our management and technical personnel.

If any pending or future governmental investigations result in an unfavorable resolution, we could be required to cease the manufacture and sale of the subject products or technology, pay fines or disgorge profits or other payments, and/or cease certain conduct and/or modify our contracting or business practices, which could have a material adverse effect on our business, financial condition and results of operations. We may be obligated to indemnify our current or former directors or employees, or former directors or employees of companies that we have acquired, in connection with regulatory investigations. These liabilities could be substantial and may include, among other things, the cost of government, law enforcement or regulatory investigations and civil or criminal fines and penalties.

In addition, the manufacture and distribution of our semiconductors must comply with various laws and adapt to changes in regulatory requirements as they occur. For example, if a country in which our products are manufactured or sold sets technical standards that are not widely shared, it may require us to stop distributing our products commercially until they comply with such new standards, lead certain of our customers to suspend imports of their products into that country, require manufacturers in that country to manufacture products with different technical standards and disrupt cross-border manufacturing relationships, any of which could have a material adverse effect on our business, financial condition and results of operations. If we fail to comply with these requirements, we could also be required to pay civil penalties or face criminal prosecution.

Global political and economic conditions and other factors related to our international operations could adversely affect our business, financial condition and results of operations.

A majority of our products are produced, sourced and sold internationally and our international revenue represents a significant percentage of our overall revenue. In addition, as of October 30, 2022, nearly 49% of our employees were located outside the U.S. Multiple factors relating to our international operations and to particular countries in which we operate could have a material adverse effect on our business, financial condition and results of operations. These factors include:

- changes in political, regulatory, legal or economic conditions or geopolitical turmoil (including China-Taiwan relations), including terrorism, war or political or military coups, state-sponsored or politically motivated cyber-attacks, or civil disturbances or political instability foreign and domestic;
- restrictive governmental actions, such as restrictions on the transfer or repatriation of funds and foreign investments, data privacy regulations, imposition of climate change regulations, and trade protection measures, including increasing protectionism, import/export restrictions (including with regards to advanced technologies), import/export duties and quotas, trade sanctions and customs duties and tariffs, all of which have increased in recent years;
- difficulty in obtaining product distribution and support, and transportation delays;
- potential inability to localize software products;
- difficulty in conducting due diligence with respect to business partners;
- public health or safety concerns, medical epidemics or pandemics, such as COVID-19, and other natural- or man-made disasters;
- nationalization of businesses and expropriation of assets; and
- changes in U.S. and foreign tax laws.

A significant legal risk associated with conducting business internationally is compliance with the various and differing laws and regulations of the many countries in which we do business. In addition, the laws in various countries are constantly evolving and may, in some cases, conflict with each other. Although our policies prohibit us, our employees and our agents from engaging in unethical business practices, there can be no assurance that all of our employees, distributors or other agents will refrain from acting in violation of our related anti-corruption or other policies and procedures. Any such violation could have a material adverse effect on our business.

The COVID-19 pandemic has disrupted normal business activity, which has impacted how we operate our business.

The COVID-19 pandemic and the efforts to control it disrupted, and reduced the efficiency of, normal business activities in much of the world. We experienced some disruption to parts of our global semiconductor supply chain, including procuring necessary components and inputs, such as wafers and substrates, in a timely fashion, with suppliers increasing lead times or placing products on allocation. As a result of these supply chain disruptions, we increased customer order lead times and placed some products on allocation. We are also largely building semiconductor products to order and this has limited and may continue to limit our ability to fulfill orders and satisfy all of the demand for our products.

The pandemic resulted in authorities around the world implementing numerous unprecedented measures, such as travel restrictions quarantines, shelter-in-place order, and factory and office shutdowns, that impacted our workforce and operations, and those of our customers, CMs, suppliers and logistics providers. In addition, disruptions to commercial transportation infrastructure impacted delivery times for materials and components to our facilities, transfers of our products to our key suppliers and, in some cases, our ability to timely ship our products to customers. This resulted in significant logistical challenges and product delays, which could recur in the event of any future closures of, or periods of reduced operations at, our warehouse or the facilities of our suppliers and providers.

In response to the pandemic, we have taken extensive measures to protect the health and safety of our employees and contractors at our facilities. However, existing or new precautionary measures or modifications in our business practices and policies, may negatively impact our business or operations, especially if the spread of COVID-19 (including any variants) worsens significantly. In addition, any actions we take may not be sufficient to mitigate the risk of infection and could result in a significant number of COVID-19-related claims. If a significant number of our employees, or employees and third parties performing key functions, including our Chief Executive Officer and members of our Board of Directors, become ill, our business may be further adversely impacted. In addition, changes to state workers' compensation laws, such as those in California, may increase our potential liability for such claims. See also our risk factor "*If we are unable to attract and retain qualified personnel, especially our engineering and technical personnel, we may not be able to execute our business strategy effectively.*"

The degree to which the pandemic ultimately impacts our business and results of operations will depend on future developments beyond our control, including the extent of actions to contain the virus (including any variants), availability and efficacy of the vaccines or other treatments, public acceptance of the vaccines (including boosters), and to what extent normal economic and operating conditions resume.

We are subject to risks associated with our distributors and other channel partners, including product inventory levels and product sell-through.

We sell our products through a direct sales force and a select network of distributors and other channel partners globally. Sales to distributors accounted for 56% of our net revenue in the fiscal year ended October 30, 2022 and are subject to a number of risks, including:

- fluctuations in demand based on our distributors' product inventory levels and end customer demand;
- our distributors and other channel partners are generally not subject to minimum sales requirements or any obligation to market our products to their customers;
- our distributors and other channel partners agreements are generally nonexclusive and may be terminated at any time without cause;
- our lack of control over the timing of delivery of our products to end customers; and
- our distributors and other channel partners may market and distribute competing products and may place greater emphasis on the sale of these products.

In addition, we are selling our semiconductor products through an increasingly limited number of distributors, which exposes us to additional customer concentration and related credit risks.

We do not always have a direct relationship with the end customers of our products. As a result, our semiconductor products may be used in applications for which they were not necessarily designed or tested, including, for example, medical devices, and they may not perform as anticipated in such applications. In such event, failure of even a small number of parts could result in significant liabilities to us, damage our reputation and harm our business and results of operations.

Our business would be adversely affected by the departure of existing members of our senior management team.

Our success depends, in large part, on the continued contributions of our senior management team, and in particular, the services of Hock E. Tan, our President and Chief Executive Officer. Effective succession planning is also important for our long-term success. Failure to ensure effective transfers of knowledge and smooth transitions involving senior management could hinder our strategic planning and execution. None of our senior management is bound by written employment contracts. In addition, we do not currently maintain key person life insurance covering our senior management. The loss of any of our senior management could harm our ability to implement our business strategy and respond to the rapidly changing market conditions in which we operate.

If we are unable to attract and retain qualified personnel, especially our engineering and technical personnel, we may not be able to execute our business strategy effectively.

Our future success depends on our ability to attract, retain and motivate qualified personnel. As the source of our technological and product innovations, our engineering and technical personnel (including cyber security experts) are a significant asset. Competition for these employees is significant in many areas of the world in which we operate, particularly in Silicon Valley and Southeast Asia where qualified engineers are in high demand. In addition, current or future immigration laws may make it more difficult to hire or retain qualified engineers, further limiting the pool of available talent. We believe equity awards provide a powerful long-term retention incentive and have historically granted these awards to the substantial majority of our employees. However, the amendments to our 2012 Stock Incentive Plan approved by our stockholders in 2021 significantly reduced the number of shares available for equity awards. As a result, we may need to change our current equity granting philosophy, which could impair our efforts to attract and retain necessary personnel. Any inability to retain, attract or motivate such personnel and provide competitive employment benefits could have a material adverse effect on our business, financial condition and results of operations.

The failure to complete our acquisition of VMware, Inc. may adversely affect our business and our stock price.

Consummation of the VMware Merger is subject to the satisfaction or waiver of customary closing conditions, including (i) the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvement Act of 1976 and clearance under the antitrust laws of the European Union and certain other jurisdictions, (ii) the receipt by VMware of a tax opinion regarding the U.S. federal income tax treatment of certain aspects of the VMware Merger, (iii) the absence of certain orders or laws preventing consummation of the VMware Merger, (iv) authorization for listing additional shares of Broadcom common stock on Nasdaq, and (v) the absence of a material adverse effect with respect to either us or VMware. There can be no assurance that these or other closing conditions will be satisfied in a timely manner or at all. Any delay in completing the acquisition could cause us not to realize some or all of the anticipated benefits when expected, if at all. If the VMware Merger is not completed, our stock price could decline to the extent it reflects an assumption that we will complete the acquisition. Furthermore, if the VMware Merger is not completed, we may suffer other consequences that could adversely affect our business, results of operations and stock price, including incurring significant acquisition costs that we would be unable to recover, negative publicity and a negative impression of us in the investment community. Additionally, under certain specified circumstances, including the termination by either us or VMware because certain required regulatory clearances are not obtained, upon termination we would be required to pay VMware a termination fee of $1.5 billion.

Failure to realize the benefits expected from the VMware Merger could adversely affect the value of our common stock.

Although we expect significant benefits to result from the VMware Merger, there can be no assurance that we will actually realize any of them, or realize them within the anticipated timeframe. Achieving these benefits will depend, in part, on our ability to integrate VMware's business successfully and efficiently. The challenges involved in this integration, which will be complex and time consuming, include the following:

- preserving customer and other important relationships of VMware and attracting new business and operational relationships;
- integrating financial forecasting and controls, procedures and reporting cycles;
- consolidating and integrating corporate, information technology, finance and administrative infrastructures;
- coordinating sales and marketing efforts to effectively position our capabilities;
- coordinating and integrating operations in countries in which we have not previously operated; and
- integrating employees and related HR systems and benefits, maintaining employee morale and retaining key employees.

If we do not successfully manage these issues and the other challenges inherent in integrating an acquired business, then we may not achieve the anticipated benefits of the VMware Merger on our anticipated timeframe or at all and our revenue, expenses, operating results, financial condition and stock price could be materially adversely affected. The successful integration of the VMware business will require significant management attention both before and after the completion of the VMware Merger, and may divert the attention of management from our business and operational issues.

We may pursue acquisitions, investments, joint ventures and dispositions, which could adversely affect our results of operations.

Our growth strategy includes acquiring or investing in businesses that offer complementary products, services and technologies, or enhance our market coverage or technological capabilities.

Any acquisitions we may undertake, including the VMware Merger, and their integration involve risks and uncertainties, such as:

- unexpected delays, challenges and related expenses, and disruption of our business;
- diversion of management’s attention from daily operations and the pursuit of other opportunities;

- incurring significant restructuring charges and amortization expense, assuming liabilities (some of which may be unexpected) and ongoing or new lawsuits, potential impairment of acquired goodwill and other intangible assets, and increasing our expenses and working capital requirements;
- the potential for deficiencies in internal controls at the acquired business, as well as implementing our own management information systems, operating systems and internal controls for the acquired operations;
- our due diligence process may fail to identify significant issues with the acquired business' products, financial disclosures, accounting practices, legal, tax and other contingencies, compliance with local laws and regulations (and interpretations thereof) in the U.S. and multiple international jurisdictions;
- additional acquisition-related debt, which could increase our leverage and potentially negatively affect our credit ratings resulting in more restrictive borrowing terms or increased borrowing costs thereby limiting our ability to borrow;
- dilution of stock ownership of existing stockholders;
- difficulties integrating the acquired business or company and in managing and retaining acquired employees, vendors and customers; and
- inaccuracies in our original estimates and assumptions used to assess a transaction, which may result in us not realizing the expected financial or strategic benefits of any such transaction.

In addition, current and future changes to the U.S. and foreign regulatory approval process and requirements related to acquisitions, including the VMware Merger, may cause approvals to take longer than anticipated, not be forthcoming or contain burdensome conditions, which may prevent the transaction or jeopardize, delay or reduce the anticipated benefits of the transaction, and impede the execution of our business strategy.

From time to time, we may also seek to divest or wind down portions of our business, either acquired or otherwise, or we may exit minority investments, any of which could materially affect our cash flows and results of operations. Such dispositions involve risks and uncertainties, including our ability to sell such businesses on terms acceptable to us, or at all, disruption to other parts of our business, potential loss of employees or customers, or exposure to unanticipated liabilities or ongoing obligations to us following any such dispositions. In addition, dispositions may include the transfer of technology and/or the licensing of certain IP rights to third-party purchasers, which could limit our ability to utilize such IP rights or assert these rights against such third-party purchasers or other third parties.

We may be involved in legal proceedings, including IP, securities litigation, and employee-related claims, which could, among other things, divert efforts of management and result in significant expense and loss of our IP rights.

We are often involved in legal proceedings, including cases involving our IP rights and those of others, commercial matters, acquisition-related suits, securities class action suits, employee-related claims and other actions. Litigation or settlement of such actions, regardless of their merit, can be costly, lengthy, complex and time consuming, diverting the attention and energies of our management and technical personnel.

The industries in which we operate are characterized by companies holding large numbers of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including actions by patent-holding companies that do not make or sell products. From time to time, third parties assert against us and our customers and distributors their IP rights to technologies that are important to our business. For example, in August 2020 judgment was entered against Broadcom and Apple for infringement of certain patents and California Institute of Technology was awarded past damages of $270.2 million from Broadcom and $837.8 million from Apple, for which Apple is seeking indemnification from Broadcom. Although the appellate court recently vacated these damages and ordered a new trial, there are no assurances that we will be successful or what, if any, damages we will be required to pay.

Many of our customer agreements, and in some cases our asset sale agreements, and/or the laws of certain jurisdictions may require us to indemnify our customers or purchasers for third-party IP infringement claims, including costs to defend those claims, and payment of damages in the case of adverse rulings. However, our CMs and suppliers may or may not be required to indemnify us should we or our customers be subject to such third-party claims. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. If any pending or future proceedings result in an adverse outcome, we could be required to:

- cease the manufacture, use or sale of the infringing products, processes or technology and/or make changes to our processes or products;
- pay substantial damages for past, present and future use of the infringing technology, including up to treble damages if willful infringement is found;

- expend significant resources to develop non-infringing technology;
- license technology from the third-party claiming infringement, which license may not be available on commercially reasonable terms, or at all;
- enter into cross-licenses with our competitors, which could weaken our overall IP portfolio and our ability to compete in particular product categories;
- pay substantial damages to our direct or end customers to discontinue use or replace infringing technology with non-infringing technology; or
- relinquish IP rights associated with one or more of our patent claims.

Any of the foregoing results could have a material adverse effect on our business, financial condition and results of operations.

In addition, we may be obligated to indemnify our current or former directors or employees, or former directors or employees of companies that we have acquired, in connection with such litigation. These liabilities could be substantial and may include, among other things, the cost of defending lawsuits against these individuals, as well as stockholder derivative suits; civil or criminal fines and penalties; legal and other expenses; and expenses associated with the remedial measure, if any, which may be imposed.

Our operating results are subject to substantial quarterly and annual fluctuations.

Our operating results have fluctuated in the past and are likely to fluctuate in the future. These fluctuations may occur on a quarterly and annual basis and are due to a number of factors, many of which are beyond our control. In addition to many of the risks described elsewhere in this "Risk Factors" section, these factors include, among others:

- the timing of launches by our customers of new product in which our products are included and changes in end-user demand for our customers' the products;
- fluctuations in the levels of component or product inventories held by our customers;
- the shift to cloud-based IT solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers;
- the timing of new software contracts and renewals, as well as the timing of any terminations of software contracts that require us to refund to customers any pre-paid amounts under the contract;
- our ability to timely develop, introduce and market new products and technologies;
- the timing and extent of our software license and subscription revenue, and other non-product revenue;
- new product announcements and introductions by us or our competitors;
- seasonality or other fluctuations in demand in our markets;
- timing and amount of research and development and related new product expenditures, and the timing of receipt of any research and development grant monies; and
- timing of any regulatory changes, particularly with respect to trade sanctions and customs duties and tariffs, and tax reform.

The foregoing factors are often difficult to predict, and these, as well as other factors, could materially adversely affect our quarterly or annual operating results. In addition, a significant amount of our operating expenses are relatively fixed in nature. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. As a result, we believe that quarter-to-quarter comparisons of our revenue and operating results may not be meaningful or a reliable indicator of our future performance. If our operating results in one or more future quarters fail to meet the expectations of securities analysts or investors, a significant decline in the trading price of our common stock may occur, which may happen immediately or over time.

Failure to adjust our manufacturing and supply chain to accurately meet customer demand could adversely affect our results of operations.

We make significant decisions, including determining the levels of business that we will seek and accept, production schedules, levels of reliance on contract manufacturing and outsourcing, internal fabrication utilization and other resource requirements, based on our estimates of customer requirements, which may not be accurate.

During the COVID-19 pandemic, we have moved largely to a build to order model and have extended customer lead times substantially in light of supply chain challenges. More typically, however, to ensure the availability of our semiconductor products we start manufacturing based on customer forecasts, which are not binding. As a result, we incur inventory and manufacturing costs in advance of anticipated sales that may be substantially lower than expected. If actual demand for our products is lower than forecast, we may also experience higher inventory carrying and operating costs and product obsolescence. Because certain of our sales, research and development, and internal manufacturing overhead expenses are relatively fixed, a reduction in customer demand may also decrease our gross margin and operating income.

Conversely, customers often require rapid increases in production on short notice. If we are unable to meet such increases in demand, this could damage our customer relationships, reduce revenue growth and margins, subject us to additional liabilities, harm our reputation, and prevent us from taking advantage of opportunities.

Winning business in the semiconductor solutions industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.

Our semiconductor business is dependent on us winning competitive bid selection processes, known as "design wins". These selection processes are typically lengthy and can require us to dedicate significant development expenditures and scarce engineering resources in pursuit of a single customer opportunity. Failure to obtain a particular design win may prevent us from obtaining design wins in subsequent generations of a particular product. This can result in lost revenue and can weaken our position in future selection processes.

Winning a product design does not guarantee sales to a customer. A delay or cancellation of a customer's plans could materially and adversely affect our financial results, as we incur significant expense in the design process and may generate little or no revenue from it. In addition, the timing of design wins is unpredictable and implementing production for a major design win, or multiple design wins at the same time, may strain our resources and those of our CMs. In such event, we may be forced to dedicate significant additional resources and incur additional costs and expenses. Further, often customers will only purchase limited numbers of evaluation units until they qualify the products and/or the manufacturing line for those products. The qualification process can take significant time and resources. Delays in qualification or failure to qualify our products may cause a customer to discontinue use of our products and result in a significant loss of revenue. Finally, customers could choose at any time to stop using our products or could fail to successfully market and sell their products, which could reduce demand for our products, and cause us to hold excess inventory, materially adversely affecting our business, financial condition and results of operations. These risks are exacerbated by the fact that many of our products, and the end products into which our products are incorporated, often have very short life cycles.

Competition in our industries could prevent us from growing our revenue.

The industries in which we operate are highly competitive and characterized by rapid technological changes, evolving industry standards, changes in customer requirements, often aggressive pricing practices and, in some cases, new delivery methods. We expect competition in these industries to continue to increase as existing competitors improve or expand their product offerings or as new competitors enter our markets.

Some of our competitors have longer operating histories, greater name recognition, a larger installed customer base, larger technical staffs, more established relationships with vendors or suppliers, or greater manufacturing, distribution, financial, research and development, technical and marketing resources than us. We also face competition from numerous smaller companies that specialize in specific aspects of the highly fragmented software industry, open source authors who provide software and IP for free, competitors who offer their products through try-and-buy or freemium models, and customers who develop competing products.

In addition, the trend toward consolidation is changing the competitive landscape. We expect this trend to continue, which may result in combined competitors having greater resources than us. Some of our competitors may also receive financial and other support from their home country government or may have a greater presence in key markets, a larger customer base, a more comprehensive IP portfolio or better patent protection than us.

The actions of our competitors, in the areas of pricing and product bundling in particular, could have a substantial adverse impact on us. Further, competitors may leverage their superior market position, as well as IP or other proprietary information, including interface, interoperability or technical information, in new and emerging technologies and platforms that may inhibit our ability to compete effectively. If we are unable to compete successfully, we may lose market share for our products or incur significant reduction in our gross margins, either of which could have a material adverse effect on our business and results of operations.

A prolonged disruption of our manufacturing facilities, research and development facilities, warehouses or other significant operations, or those of our suppliers, could have a material adverse effect on our business, financial condition and results of operations.

Although we operate a primarily outsourced manufacturing business model, we also rely on our own manufacturing facilities, in particular in Fort Collins, Colorado, Singapore, and Breinigsville, Pennsylvania. We use these internal fabrication facilities for products utilizing our innovative and proprietary processes. Our Fort Collins and Breinigsville facilities are the sole sources for the FBAR components used in many of our wireless devices and for the indium phosphide-based wafers used in our fibre optics products, respectively. Many of our facilities, and those of our CMs and suppliers, are located in California and the Pacific Rim region, which have above average seismic activity and severe weather activity. In addition, a significant majority of our research and development personnel are located the Czech Republic, India, Israel and the U.S., with the expertise of the personnel at each such location tending to be focused on one or two specific areas, and our primary warehouse is in Malaysia.

A prolonged disruption at or shut-down of one or more of our manufacturing facilities or warehouses, especially our Colorado, Singapore, Malaysia and Pennsylvania facilities, or those of our CMs or suppliers, due to natural- or man-made disasters or other events outside of our control, such as equipment malfunction or widespread outbreaks of acute illness, including COVID-19, or for any other reason, would limit our capacity to meet customer demands and delay new product development until a replacement facility and equipment, if necessary, were found. To date, we have not experienced a material event, however such event could disrupt our operations, delay production, shipments and revenue, result in us being unable to timely satisfy customer demand, expose us to claims by our customers, result in significant expense to repair or replace our affected facilities, and, in some instances, could significantly curtail our research and development efforts in a particular product area or target market. As a result, we could forgo revenue opportunities, potentially lose market share, damage our customer relationships and be subject to litigation and additional liabilities, all of which could materially and adversely affect our business. Although we purchase insurance to mitigate certain losses, such insurance often carries a high deductible amount and any uninsured losses could negatively affect our operating results. In addition, even if we were able to promptly resume production of our affected products, if our customers cannot timely resume their own manufacturing following such an event, they may cancel or scale back their orders from us and this may in turn adversely affect our results of operations. Such events could also result in increased fixed costs relative to the revenue we generate and adversely affect our results of operations.

We may be unable to maintain appropriate manufacturing capacity or product yields at our own manufacturing facilities, which could adversely affect our relationships with our customers, and our business, financial condition and results of operations.

We must maintain appropriate capacity and product yields at our own manufacturing facilities to meet anticipated customer demand. From time to time, this requires us to invest in expansion or improvements of those facilities, which often involves substantial cost and other risks. Such expanded manufacturing capacity may still be insufficient, or may not come online soon enough, to meet customer demand and we may have to put customers on product allocation, forgo sales or lose customers as a result. Conversely, if we overestimate customer demand, we would experience excess capacity and fixed costs at these facilities will not be fully absorbed, all of which could adversely affect our results of operations. Similarly, reduced product yields, due to design or manufacturing issues or otherwise, may involve significant time and cost to remedy and cause delays in our ability to supply product to our customers, all of which could cause us to forgo sales, incur liabilities or lose customers, and harm our results of operations.

An impairment of the confidentiality, integrity, or availability of our IT systems, or those of one or more of our corporate infrastructure vendors could have a material adverse effect on our business.

Our business depends on various internally managed IT systems and outsourced IT services, including cloud-based and other critical corporate infrastructure services relating to, among other things, financial reporting, product orders and shipping, human resources, benefit plan administration, IT network development, network monitoring and electronic communication services, as well as third-party data centers. Any failure of these internal or third-party systems and services to operate effectively could disrupt our operations and could have a material adverse effect on our business, financial condition and results of operations. Our operations are dependent upon our ability to protect our IT infrastructure against damage from business continuity events that could have a significant disruptive effect. Although these systems are designed to protect and secure our customers', suppliers' and employees' confidential information, as well as our own proprietary information, we are, out of necessity, dependent on our vendors to adequately address cyber security threats to their own systems. In addition, software products we use (including technologies produced by us) have occasionally had in the past and may have in the future, vulnerabilities that, if left unmanaged, could reduce the overall level of security of the systems on which the software is installed.

Cyber-attacks are increasing in number and sophistication, are well-financed, in some cases supported by state actors, and are designed to not only attack, but also to evade detection. Since the techniques used to obtain unauthorized access to systems, or to otherwise sabotage them, change frequently and are often not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Geopolitical instability, such as Russia's invasion of Ukraine, may increase the likelihood that we will experience direct or collateral consequences from cyber conflicts between nation-states or other politically motivated actors targeting critical technology infrastructure. Accidental or willful security breaches or other unauthorized access to our information systems or the systems of our service providers, or the existence of computer viruses or malware (such as ransomware) in our or their data or software could expose us to a risk of information loss, business disruption, and misappropriation of proprietary and confidential information, including information relating to our products or customers and the personal information of our employees or third parties. Such an event could disrupt our business and result in, among other things, unfavorable publicity, damage to our reputation, loss of our trade secrets and other competitive information, litigation by affected parties and possible financial obligations for liabilities and damages related to the theft or misuse of such information, significant remediation costs, disruption of key business operations and significant diversion of our resources, as well as fines and other sanctions resulting from any related breaches of data privacy regulations (such as the General Data Protection Regulation), any of which could have a material adverse effect on our business, profitability and financial condition. While we may be entitled to damages if our vendors fail to perform under their agreements with us, any award may be insufficient to cover the actual costs incurred by us and, as a result of a vendor's failure to perform, we may be unable to collect any damages.

Despite our internal controls and investment in security measures, we have, from time to time, been subject to disruptive cyber-attacks or there have been attempts of unauthorized network intrusions and malware on our own IT networks. Although no such cyber security incidents have been material to Broadcom, we continue to devote resources to protect our systems and data from unauthorized access or misuse, and we may be required to expend greater resources in the future.

U.S. and foreign regulators have also increased their focus on cyber security vulnerabilities and risks. Compliance with laws and regulations concerning privacy, cyber security, data governance, and data protection could result in significant expense, and any failure to comply could result in proceedings against us by regulatory authorities or other third parties. Further, customers and service providers increasingly demand rigorous contractual, certification and audit provisions regarding privacy, cyber security, data governance, data protection, confidentiality, and IP, which may also increase our overall compliance burden.

Our gross margin is dependent on a number of factors, including our product mix, price erosion, acquisitions we may make, level of capacity utilization and commodity prices.

Our gross margin is highly dependent on product mix, which is susceptible to seasonal and other fluctuations in our markets. A shift in sales mix away from our higher margin products, as well as the timing and amount of our software licensing and non-product revenue, could adversely affect our future gross margin percentages. In addition, increased competition and the existence of product alternatives, more complex engineering requirements, lower demand, industry oversupply or reductions in our technological lead compared to our competitors, and other factors have in the past and may in the future lead to further price erosion, lower revenue and lower margin. Conversely, periods of robust demand that create a supply imbalance, as we have seen recently, can lead to higher gross margins that may not be sustainable over the longer term.

In addition, semiconductor manufacturing requires significant capital investment, leading to high fixed costs, including depreciation expense. If we are unable to utilize our owned manufacturing facilities at a high level, the fixed costs associated with these facilities will not be fully absorbed, resulting in higher average unit costs and a lower gross margin. Furthermore, we do not hedge our exposure to commodity prices, some of which are very volatile, and sudden or prolonged increases in commodities prices may adversely affect our gross margin.

Our gross margin may also be adversely affected if businesses or companies that we acquire have different gross margin profiles and by expenses related to such acquisitions.

We utilize a significant amount of IP in our business. If we are unable or fail to protect our IP, our business could be adversely affected.

Our success depends in part upon protecting our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks and trade secrets, as well as customary contractual protections with our customers, suppliers, employees and consultants. We spend significant resources to monitor and protect our IP rights, including the unauthorized use of our products, usage rates of the software seat licenses and subscriptions that we sell, and even with significant expenditures, we may not be able to protect the IP rights that are valuable to our business. We are unable to predict or assure that:

- our IP rights will not lapse or be invalidated, circumvented, challenged, or, in the case of third-party IP rights licensed to us, be licensed to others;

- our IP rights will provide competitive advantages to us;
- rights previously granted by third parties to IP licensed or assigned to us, including portfolio cross-licenses, will not hamper our ability to assert our IP rights or hinder the settlement of currently pending or future disputes;
- any of our pending or future patent, trademark or copyright applications will be issued or have the coverage originally sought;
- our IP rights will be enforced in certain jurisdictions where competition is intense or where legal protection may be weak; or
- we have sufficient IP rights to protect our products or our business.

Effective IP protection may be unavailable or more limited in other jurisdictions, relative to those protections available in the U.S., and may not be applied for or may be abandoned in one or more relevant jurisdictions. In addition, when patents expire, we lose the protection and competitive advantages they provided to us.

We also generate revenue from licensing royalty payments and from technology claim settlements relating to certain of our IP. Licensing of our IP rights, particularly exclusive licenses, may limit our ability to assert those IP rights against third parties, including the licensee of those rights. In addition, we may acquire companies with IP that is subject to licensing obligations to other third parties. These licensing obligations may extend to our own IP following any such acquisition and may limit our ability to assert our IP rights. From time to time, we pursue litigation to assert our IP rights, including, in some cases, against our customers and suppliers. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. Conversely, third parties have and may in the future pursue IP litigation against us, including as a result of our IP licensing business. An adverse decision in such types of legal action could limit our ability to assert our IP rights and limit the value of our technology, including the loss of opportunities to sell or license our technology to others or to collect royalty payments, which could otherwise negatively impact our business, financial condition and results of operations.

From time to time, we may need to obtain additional IP licenses or renew existing license agreements. We are unable to predict whether these license agreements can be obtained or renewed on acceptable terms or at all.

If our software products do not remain compatible with ever-changing operating environments, platforms, or third-party products, demand for our products and services could decrease, which could materially adversely affect our business.

We may be required to make substantial modification of our products to maintain compatibility with operating systems, systems software and computer hardware used by our customers or to provide our customers with desired features or capabilities. We must also continually address the challenges of dynamic and accelerating market trends and competitive developments, such as the emergence of advanced persistent threats in the security space to compete effectively. There can be no assurance that we will be able to adapt our products in response to these developments.

Further, our software solutions interact with a variety of software and hardware developed by third parties. If we lose access to third-party code and specifications for the development of code, this could negatively impact our ability to develop compatible software. In addition, if software providers and hardware manufacturers, including some of our largest vendors, adopt new policies restricting the use or availability of their code or technical documentation for their operating systems, applications, or hardware, or otherwise impose unfavorable terms and conditions for such access, this could result in higher research and development costs for the enhancement and modification of our existing products or development of new products. Any additional restrictions could materially adversely affect our business, financial condition and operating results and cash flow.

Failure to enter into software license agreements on a satisfactory basis could materially adversely affect our business.

Many of our existing customers have multi-year enterprise software license agreements, some of which involve substantial aggregate fee amounts. Customer renewal rates may decline or fluctuate as a result of a number of factors, including the level of customer satisfaction with our solutions or customer support, customer budgets and the pricing of our solutions as compared with the solutions offered by our competitors, any of which may cause our revenue to grow more slowly than expected, if at all. The failure to renew customer agreements of similar scope, on terms that are commercially attractive to us, could materially adversely affect our business, financial condition and operating results and cash flow.

Certain software that we use in our products is licensed from third parties and may not be available to us in the future, which may delay product development and production or cause us to incur additional expense.

Some of our solutions contain software licensed from third parties, some of which may not be available to us in the future on terms that are acceptable to us or allow our products to remain competitive. The loss of these licenses or the inability to maintain any of them on commercially acceptable terms could delay development of future products or the enhancement of existing products.

Certain software we use is from open source code sources, which, under certain circumstances could materially adversely affect our business, financial condition, operating results and cash flow.

Some of our products contain software from open source code sources, the use of which may subject us to certain conditions, including the obligation to offer such products for no cost or to make the proprietary source code of those products publicly available. Further, although some open source vendors provide warranty and support agreements, it is common for such software to be available "as-is" with no warranty, indemnity or support. Although we monitor our use of such open source code to avoid subjecting our products to unintended conditions, such use, under certain circumstances, could materially adversely affect our business, financial condition and operating results and cash flow, including if we are required to take remedial action that may divert resources away from our development efforts.

Failure of our software products to manage and secure IT infrastructures and environments could have a material adverse effect on our business.

Certain aspects of our software products are intended to manage and secure IT infrastructures and environments, and as a result, we expect these products to be ongoing targets of cyber security attacks. Open source code or other third-party software used in these products could also be targeted. Although we continually seek to improve our countermeasures to prevent such incidents, we may be unable to anticipate every scenario and it is possible that certain cyber threats or vulnerabilities will be undetected or unmitigated in time to prevent an attack or an accidental incident on us and our customers. Additionally, efforts by malicious cyber actors or others could cause interruptions, delays or cessation of our product licensing, or modification of our software, which could cause us to lose existing or potential customers. A successful cyber security attack involving our products could cause customers and potential customers to believe our services are ineffective or unreliable and result in, among other things, the loss of customers, unfavorable publicity, damage to our reputation, difficulty in marketing our products, allegations by our customers that we have not performed our contractual obligations and give rise to significant costs, including costs related to developing solutions or indemnification obligations under our agreements. Any such event could adversely impact our revenue and results of operations. See also "*An impairment of the confidentiality, integrity, or availability of our IT systems, or those of one or more of our corporate infrastructure vendors, could have a material adverse effect on our business*".

We are subject to warranty claims, product recalls and product liability.

From time to time, we may be subject to warranty or product liability claims that may lead to significant expense. Our customer contracts typically contain warranty and indemnification provisions, and in certain cases may also contain liquidated damages provisions, relating to product quality issues. The potential liabilities associated with such provisions are significant, and in some cases, including in agreements with some of our largest customers, are potentially unlimited. Any such liabilities may greatly exceed any revenue we receive from the relevant products. Costs, payments or damages incurred or paid by us in connection with warranty and product liability claims and product recalls could materially adversely affect our financial condition and results of operations. We may also be exposed to such claims as a result of any acquisition we may undertake in the future.

Product liability insurance is subject to significant deductibles and there is no guarantee that such insurance will be available or adequate to protect against all such claims, or we may elect to self-insure with respect to certain matters. For example, it is possible for one of our customers to recall a product containing one of our semiconductor devices. In such an event, we may incur significant costs and expenses, including among others, replacement costs, contract damage claims from our customers and reputational harm. Although we maintain reserves for reasonably estimable liabilities and purchase product liability insurance, our reserves may be inadequate to cover the uninsured portion of such claims. Conversely, in some cases, amounts we reserve may ultimately exceed our actual liability for particular claims and may need to be reversed.

The complexity of our products could result in unforeseen delays or expense or undetected defects or bugs, which could adversely affect the market acceptance of new products, damage our reputation with current or prospective customers, and materially and adversely affect our operating costs.

Highly complex products, such as those we offer, may contain defects and bugs when they are first introduced or as new versions, software documentation or enhancements are released, or their release may be delayed due to unforeseen difficulties during product development. If any of our products or third-party components used in our products, contain defects or bugs, or have reliability, quality or compatibility problems, we may not be able to successfully design workarounds. Furthermore, if any of these problems are not discovered until after we have commenced commercial production or deployment of a new product, we may be required to incur additional development costs and product recall, repair or replacement costs. Significant technical challenges also arise with our software products because our customers license and deploy our products across a variety of computer platforms and integrate them with a number of third-party software applications and databases. As a result, if there is system-wide failure or an actual or perceived breach of information integrity, security or availability occurs in one of our end-user customer's system, it can be difficult to determine which product is at fault and we could ultimately be harmed by the failure of another supplier's product. Consequently, our reputation may be damaged and customers may be reluctant to buy our products, which could materially and adversely affect our ability to retain existing customers and attract new customers. To resolve these problems, we may have to invest significant capital and other resources and we would likely lose, or experience a delay in, market acceptance of the affected product or products. These problems may also result in claims against us by our customers or others. For example, if a delay in the manufacture and delivery of our products causes the delay of a customer's end-product delivery, we may be required, under the terms of our agreement with that customer, to compensate the customer for the adverse effects of such delays. As a result, our financial results could be materially adversely affected.

We make substantial investments in research and development and unsuccessful investments could materially adversely affect our business, financial condition and results of operations.

The industries in which we compete are characterized by rapid technological change, changes in customer requirements, frequent new product introductions and enhancements, short product cycles and evolving industry standards, and new delivery methods. In addition, semiconductor products transition over time to increasingly smaller line width geometries and failure to successfully transition to smaller geometry process technologies could impair our competitive position. In order to remain competitive, we have made, and expect to continue to make, significant investments in research and development. If we fail to develop new and enhanced products and technologies, if we focus on technologies that do not become widely adopted, or if new competitive technologies that we do not support become widely accepted, demand for our products may be reduced. Increased investments in research and development or unsuccessful research and development efforts could cause our cost structure to fall out of alignment with demand for our products, which would have a negative impact on our financial results.

We collect, use, store, or otherwise process personal information, which subjects us to privacy and data security laws and contractual commitments, and our actual or perceived failure to comply with such laws and commitments could harm our business.

We collect, use and store (collectively, "process") a high volume, variety and velocity of certain personal information in connection with the operation of our business. This creates various levels of privacy risks across different parts of our business, depending on the type of personal information, the jurisdiction in question and the purpose of their processing. The personal information we process is subject to an increasing number of federal, state, local, and foreign laws and regulations regarding privacy and data security, as well as contractual commitments. Privacy legislation and other data protection regulations, enforcement and policy activity in this area are expanding rapidly in many jurisdictions and creating a complex regulatory compliance environment. Sectoral legislation, certification requirements and technical standards applying to certain categories of our customers, such as those is the financial services or public sector, are likely to further exacerbate this trend. The cost of complying with and implementing these privacy-related and data governance measures could be significant as they may create additional burdensome security, business process, business record or data localization requirements. Concerns about government interference, sovereignty, expanding privacy, cyber security and data governance legislation could adversely affect our customers and our products and services, particularly in cloud computing, artificial intelligence and our own data management practices. The theft, loss or misuse of personal data collected, used, stored or transferred by us to run our business could result in significantly increased business and security costs or costs related to defending legal claims. Any inadvertent failure or perceived failure by us to comply with privacy, data governance or cyber security obligations may result in governmental enforcement actions, litigation, substantial fines and damages, and could cause our customers to lose trust in us, which could have an adverse effect on our reputation and business.

We are subject to environmental, health and safety laws, which could increase our costs, restrict our operations and require expenditures that could have a material adverse effect on our results of operations and financial condition.

We are subject to a variety of domestic and international laws and regulations relating to the use, disposal, clean-up of and human exposure to hazardous materials. Compliance with environmental, health and safety requirements could, among other things, require us to modify our manufacturing processes, restrict our ability to expand our facilities, or require us to acquire pollution control equipment, all of which can be very costly. Any failure by us to comply with such requirements could result in the limitation or suspension of the manufacture of our products and could result in litigation against us and the payment of significant fines and damages by us in the event of a significant adverse judgment. In addition, complying with any cleanup or remediation obligations for which we are or become responsible could be costly and have a material adverse effect on our business, financial condition and results of operations.

Changing requirements relating to the materials composition of our semiconductor products, including the restrictions on lead and certain other substances in electronic products sold in various countries, including the U.S., China and Japan, and in the European Union, increase the complexity and costs of our product design and procurement operations and may require us to re-engineer our products. Such re-engineering may result in excess inventory or other additional costs and could have a material adverse effect on our results of operations. We may also experience claims from employees from time to time with regard to exposure to hazardous materials or other workplace related environmental claims.

Social and environmental regulations, policies and provisions, as well as customer and investor demands, may make our supply chain more complex and may adversely affect our relationships with customers and investors.

There is an increasing focus on corporate social and environmental responsibility in the semiconductor industry, particularly with OEMs that manufacture consumer electronics. A number of our customers have adopted, or may adopt, procurement policies that include social and environmental responsibility provisions or requirements that their suppliers should comply with, or they may seek to include such provisions or requirements in their procurement terms and conditions. An increasing number of investors are also requiring companies to disclose corporate social and environmental policies, practices and metrics. In addition, various jurisdictions are developing climate change-based laws or regulations that could cause us to incur additional direct costs for compliance, as well as indirect costs resulting from our customers, suppliers, or both incurring additional compliance costs that are passed on to us. These legal and regulatory requirements, as well as investor expectations, on corporate environmental and social responsibility practices and disclosure, are subject to change, can be unpredictable, and may be difficult and expensive for us to comply with, given the complexity of our supply chain and our significant outsourced manufacturing. If we are unable to comply, or are unable to cause our suppliers or CMs to comply, with such policies or provisions or meet the requirements of our customers and investors, a customer may stop purchasing products from us or an investor may sell their shares, and may take legal action against us, which could harm our reputation, revenue and results of operations.

In addition, as part of their corporate social and environmental responsibility programs, an increasing number of OEMs are seeking to source products that do not contain minerals sourced from areas where proceeds from the sale of such minerals are likely to be used to fund armed conflicts, such as in the Democratic Republic of Congo. This could adversely affect the sourcing, availability and pricing of minerals used in the manufacture of semiconductor devices, including our products. As a result, we may face difficulties in satisfying these customers’ demands, which may harm our sales and operating results.

The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future, which could harm our revenue and gross profit.

The semiconductor products we develop and sell are used for high volume applications. As a result, the prices of those products have often decreased rapidly. Gross profit on our products may be negatively affected by, among other things, pricing pressures from our customers. In the past, we have reduced the average selling prices of our products in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. In addition, some of our customer agreements provide for volume-based pricing and product pricing roadmaps, which can also reduce the average selling prices of our products over time. Our margins and financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing manufacturing costs, or developing new and higher value-added products on a timely basis.

Fluctuations in foreign exchange rates could result in losses.

We operate global businesses and our consolidated financial results are reported in U.S. dollars. However, some of the revenue and expenses of our foreign subsidiaries are denominated in local currencies. Fluctuations in foreign exchange rates against the U.S. dollar could result in substantial changes in reported revenues and operating results due to the foreign exchange impact of translating these transactions into U.S. dollars.

In the normal course of business, we employ various hedging strategies to partially mitigate these risks, including the use of derivative instruments. These strategies may not be effective in protecting us against the effects of fluctuations in foreign exchange rates. As a result, fluctuations in foreign exchange rates could result in financial losses.

Risks Related to Our Taxes

Changes in tax legislation or policies could materially impact our financial position and results of operations.

Corporate tax reform, anti-base-erosion rules and tax transparency continue to be high priorities in many jurisdictions. As a result, policies regarding corporate income and other taxes in numerous jurisdictions are under heightened scrutiny and tax reform legislation has been, and will likely continue to be, proposed or enacted in a number of jurisdictions in which we operate.

After enactment of the U.S. Tax Cuts and Jobs Act, most of our income is taxable in the U.S. with a significant portion taxable under the Global Intangible Low-Taxed Income ("GILTI") regime. Beginning in fiscal year 2027, the deduction allowable under the GILTI regime will decrease from 50% to 37.5%, which will increase the effective tax rate imposed on our income. The U.S. also enacted the Inflation Reduction Act of 2022 ("IRA") in August 2022, which creates a new book minimum tax of at least 15% of consolidated GAAP pre-tax income for corporations with average book income in excess of $1 billion. The book minimum tax will first apply to our fiscal year 2024 and any increase in our effective tax rate or cash tax will depend on a number of factors, including any offsets for foreign tax credits or general business credits, or changes in book income following business combinations. The IRA also creates an excise tax of 1% of the value of any stock repurchased by us after December 31, 2022. We could be subject to this new excise tax, but the amount will vary depending on various factors, including the amount and frequency of any stock repurchases, applicability in certain business combination transactions, and any permitted reductions or exceptions to the amount subject to the tax. If (i) the U.S. tax rate increases, (ii) the deduction allowable under the GILTI regime is further reduced or eliminated, (iii) additional limitations are put on our ability to deduct interest expense, or (iv) the requirement for research and development costs to be capitalized beginning in fiscal year 2023 remains in effect, our provision for income taxes, net income, and cash flows would be adversely impacted.

In addition, many countries are implementing legislation and other guidance to align their international tax rules with the Organisation for Economic Co-operation and Development's ("OECD") Base Erosion and Profit Shifting recommendations and action plan that aim to standardize and modernize global corporate tax policy, including changes to cross-border tax, transfer pricing documentation rules, and nexus-based tax incentive practices. The OECD is also continuing discussions surrounding fundamental changes in allocation of profits among tax jurisdictions in which companies do business, as well as the implementation of a global minimum tax (namely the "Pillar One" and "Pillar Two" proposals). Some countries intend to implement laws based on Pillar Two proposals, which may adversely impact our provision for income taxes, net income and cash flows. As a result of this heightened scrutiny, prior decisions by tax authorities regarding treatments and positions of corporate income taxes could be subject to enforcement activities, and legislative investigation and inquiry, which could also result in changes in tax policies or prior tax rulings. Any such changes may also result in the taxes we previously paid being subject to change.

Any substantial changes in domestic or international corporate tax policies, regulations or guidance, enforcement activities or legislative initiatives may materially adversely affect our business, the amount of taxes we are required to pay and our financial condition and results of operations generally.

If the tax incentives or tax holiday arrangements we have negotiated change or cease to be in effect or applicable for any reason, or if our assumptions and interpretations regarding tax laws and incentives or holiday arrangements prove to be incorrect, our corporate income taxes could significantly increase.

Our operations are currently structured to benefit from the various tax incentives extended to us in various jurisdictions to encourage investment or employment. For example, absent our principal tax incentives from the Singapore Economic Development Board, which is scheduled to expire in 2025, the corporate income tax rate that would apply to our Singapore taxable income would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. Each tax incentive and tax holiday is subject to our compliance with various operating and other conditions and may, in some instances, be amended or terminated prior to their scheduled termination date by the relevant governmental authority. If we cannot, or elect not to, comply with the operating conditions included in any particular tax incentive or tax holiday, we could, in some instances, be required to refund previously realized material tax benefits, or if such tax incentive or tax holiday is terminated prior to its expiration absent a new incentive applying, we will lose the related tax benefits earlier than scheduled. In addition, we may be required, or elect, to modify our operational structure and tax strategy in order to keep an incentive, which could result in a decrease in the benefits of the incentive. Our tax incentives could also be adversely impacted if the global minimum tax provisions (Pillar Two) are adopted in a country in which we have an existing tax incentive. Our tax incentives and tax holiday, before taking into consideration U.S. foreign tax credits, decreased the provision for income taxes by approximately $1,821 million in the aggregate and increased diluted net income per share by $4.31 for fiscal year 2022.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded, we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows.

Our income taxes and overall cash tax costs are affected by a number of factors that could materially, adversely affect financial results.

Significant judgment is required in determining our worldwide income taxes. In the ordinary course of our business, there are many transactions where the ultimate tax determination is uncertain. Additionally, our calculations of income taxes payable currently and on a deferred basis are based on our interpretations of applicable tax laws in the jurisdictions in which we are required to file tax returns. Although we believe our tax estimates are reasonable, there is no assurance that the final determination of our income tax liability will not be materially different than what is reflected in our income tax provisions and accruals.

Our income taxes are subject to volatility and could be adversely affected by numerous factors including:

- reorganization or restructuring of our businesses, tangible and intangible assets, outstanding indebtedness and corporate structure;
- jurisdictional mix of our income and assets;
- changes in the allocation of income and expenses, including adjustments related to changes in our corporate structure, acquisitions or tax law;
- changes in U.S and foreign tax laws and regulations, changes to the taxation of earnings of foreign subsidiaries, taxation of U.S. income generated from foreign sources, the deductibility of expenses attributable to income and foreign tax credit rules;
- tax effects of increases in non-deductible employee compensation; and
- changes in tax accounting rules or principles and in the valuation of deferred tax assets and liabilities.

We have adopted transfer pricing policies that call for the provision of services, the sale of products, the arrangement of financing and the grant of licenses from one affiliate to another at prices that we believe are negotiated on an arm’s length basis. Our taxable income is dependent upon acceptance by local authorities that our operational practices and intercompany transfer pricing are on an arm’s length basis. Due to inconsistencies in application of the arm’s length standard among taxing authorities, as well as lack of comprehensive treaty-based protection, transfer pricing challenges by tax authorities could, if successful, result in adjustments for prior or future years. The effects of any such changes could subject us to higher taxes and our earnings, results of operations and cash flow would be adversely affected.

In addition, we are subject to, and are under, tax audit in various jurisdictions, and such jurisdictions may assess additional income tax against us. Although we believe our tax positions are reasonable, the final determination of tax audits could be materially different from our income tax provisions and accruals. The ultimate result of an audit could have a material adverse effect on our results of operations and cash flows in the period or periods for which that determination is made.

Risks Related to Our Indebtedness

Our substantial indebtedness could adversely affect our financial health and our ability to execute our business strategy.

As of October 30, 2022, the aggregate indebtedness under our senior notes was $41,218 million. This amount does not reflect any debt we expect to incur or assume in connection with the VMware Merger.

Our substantial indebtedness could have important consequences including:

- increasing our vulnerability to adverse general economic and industry conditions;
- exposing us to interest rate risk due to our variable rate term facilities, which we do not typically hedge against;
- limiting our flexibility in planning for, or reacting to, changes in the economy and the semiconductor industry;
- placing us at a competitive disadvantage compared to our competitors with less indebtedness;

- making it more difficult to borrow additional funds in the future to fund growth, acquisitions, working capital, capital expenditures and other purposes; and
- potentially requiring us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund our other business needs.

We receive debt ratings from the major credit rating agencies in the U.S. Factors that may impact our credit ratings include debt levels, planned asset purchases or sales and near-term and long-term production growth opportunities. Liquidity, asset quality, cost structure, reserve mix and commodity pricing levels could also be considered by the rating agencies. While we are focused on maintaining investment grade ratings from these agencies, we may be unable to do so. Any downgrade in our credit rating or the ratings of our indebtedness, or adverse conditions in the debt capital markets, could:

- adversely affect the trading price of, or market for, our debt securities;
- increase interest expense under our term facilities;
- increase the cost of, and adversely affect our ability to refinance, our existing debt; and
- adversely affect our ability to raise additional debt.

The instruments governing our indebtedness impose certain restrictions on our business.

The instruments governing our indebtedness contain certain covenants imposing restrictions on our business. These restrictions may affect our ability to operate our business, to plan for, or react to, changes in the market conditions or our capital needs and may limit our ability to take advantage of potential business opportunities as they arise. The restrictions placed on us include maintenance of an interest coverage ratio and limitations on our ability to incur certain secured debt, enter into certain sale and lease-back transactions and consolidate, merge, sell or otherwise dispose of all or substantially all of our assets. In addition, the instruments contain customary events of default upon the occurrence of which, after any applicable grace period, the indebtedness could be declared immediately due and payable. In such event, we may not have sufficient available cash to repay such debt at the time it becomes due, or be able to refinance such debt on acceptable terms or at all. Any of the foregoing could materially adversely affect our business, financial condition and results of operations.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on, and to refinance our debt, depends on our future performance, which is subject to economic, financial, competitive and other factors. Our business may not continue to generate cash flow from operations in the future sufficient to satisfy our obligations under our current indebtedness and any future indebtedness we may incur and to make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as reducing or delaying investments or capital expenditures, selling assets, refinancing or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our outstanding indebtedness or future indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms when needed, which could result in a default on our indebtedness.

Risks Related to Owning Our Common Stock

At times, our stock price has been volatile and it may fluctuate substantially in the future, which could result in substantial losses for our investors as well as class action litigation against us and our management which could cause us to incur substantial costs and divert our management's attention and resources.

The trading price of our common stock has, at times, fluctuated significantly and could be subject to wide fluctuations in response to any of the risk factors listed in this "Risk Factors" section, and others, including:

- issuance of new or updated research or other reports by securities analysts;
- fluctuations in the valuation and results of operations of our significant customers as well as companies perceived by investors to be comparable to us;
- announcements of proposed acquisitions by us or our competitors;
- announcements of, or expectations of, additional debt or equity financing transactions;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our common stock;
- hedging or arbitrage trading activity involving our common stock; and
- unsubstantiated news reports or other inaccurate publicity regarding us or our business.

These fluctuations are often unrelated or disproportionate to our operating performance. Broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or currency fluctuations, may negatively impact the market price of our common stock. You may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. In addition, we have been, and in the future we may be, subject to lawsuits stemming from our acquisitions, including the VMware Merger. Securities litigation against us, including the lawsuits related to such acquisitions, could result in substantial costs and divert our management’s attention from other business concerns, which could seriously harm our business.

The amount and frequency of our stock repurchases may fluctuate.

The amount, timing and execution of our stock repurchase program may fluctuate based on our priorities for the use of cash for other purposes. These purposes include operational spending, capital spending, acquisitions, repayment of debt and returning cash to our stockholders as dividend payments. Changes in cash flows, tax laws and our stock price could also impact our stock repurchase program. We are not obligated to repurchase any specific amount of shares of common stock, and the stock repurchase program may be suspended or terminated at any time.

A substantial amount of our stock is held by a small number of large investors and significant sales of our common stock by one or more of these holders could cause our stock price to fall.

As of September 30, 2022, we believe 10 of our 20 largest holders of common stock were active institutional investors who held approximately 27% of our outstanding shares of common stock in the aggregate. These investors may sell their shares at any time for a variety of reasons and such sales could depress the market price of our common stock. In addition, any such sales of our common stock by these entities could also impair our ability to raise capital through the sale of additional equity securities.

There can be no assurance that we will continue to declare cash dividends.

Our Board of Directors has adopted a dividend policy pursuant to which we currently pay a cash dividend on our common stock on a quarterly basis. The declaration and payment of any dividend is subject to the approval of our Board of Directors and our dividend may be discontinued or reduced at any time. Because we are a holding company, our ability to pay cash dividends is also limited by restrictions or limitations on our ability to obtain sufficient funds through dividends from subsidiaries. There can be no assurance that we will declare cash dividends in the future in any particular amounts, or at all.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We are headquartered in San Jose, California and our primary warehouse is located in Malaysia. We conduct our administration, manufacturing, research and development, sales and marketing in both owned and leased facilities. We believe that our owned and leased facilities are adequate for our present operations. We do not identify or allocate assets by operating segment.

As of October 30, 2022, our owned and leased facilities in excess of 100,000 square feet consisted of:

(In square feet)	United States	Other Countries	Total
Owned facilities [1]	2,586,368	928,888	3,515,256
Leased facilities [2]	796,508	1,310,661	2,107,169
Total facilities	3,382,876	2,239,549	5,622,425

[1] Includes 318,000 square feet and 153,000 square feet of property owned in Malaysia subject to a 60-year land lease with the state authority expiring in May 2051 and March 2077, respectively, subject to renewal at our option.

[2] Building leases expire on varying dates through February 2046 and generally include renewals at our option.

ITEM 3. LEGAL PROCEEDINGS

The information set forth under Note 14. “Commitments and Contingencies” included in Part II, Item 8. of this Annual Report on Form 10-K, is incorporated herein by reference. For an additional discussion of certain risks associated with legal proceedings, see “Risk Factors” above.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Broadcom common stock is listed on The Nasdaq Global Select Market under the symbol “AVGO”.

Holders

As of November 25, 2022, there were 1,060 holders of record of our common stock. A substantially greater number of stockholders are “street name” or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

Unregistered Sales of Equity Securities

On August 1, 2022, we issued 9,923 restricted shares of our common stock to one individual in connection with our acquisition of a company. The restrictions lapse over three years subject to the individual's continued employment. The issuance of these shares was exempt from registration under the Securities Act of 1933, as amended, in reliance upon Section 4(a)(2) thereof.

Issuer Purchases of Equity Securities

During the fiscal quarter ended October 30, 2022, we paid approximately $274 million in employee withholding taxes due upon the vesting of net settled equity awards. We withheld approximately 1 million shares of common stock from employees in connection with such net share settlement at an average price of $502.62 per share. These shares may be deemed to be “issuer purchases” of shares.

In December 2021, our Board of Directors authorized a stock repurchase program to repurchase up to $10 billion of our common stock from time to time on or prior to December 31, 2022. During fiscal year 2022, we repurchased and retired approximately 12 million shares of our common stock for $7 billion under this stock repurchase program.

In May 2022, our Board of Directors authorized another stock repurchase program to repurchase up to an additional $10 billion of our common stock from time to time through December 31, 2023.

Repurchases under our stock repurchase programs may be effected through a variety of methods, including open market or privately negotiated purchases. The timing and amount of shares repurchased will depend on the stock price, business and market conditions, corporate and regulatory requirements, alternative investment opportunities, acquisition opportunities, and other factors. We are not obligated to repurchase any specific amount of shares of common stock, and the stock repurchase programs may be suspended or terminated at any time.

Stock Performance Graph

The following graph shows a comparison of cumulative total return for our common stock, the Standard & Poor's 500 Stock Index (the "S&P 500 Index") and the NASDAQ 100 Index for the five fiscal years ended October 30, 2022. The total return graph and table assume that $100 was invested on October 27, 2017 (the last trading day of our fiscal year 2017) in each of Broadcom Inc. common stock, the S&P 500 Index and the NASDAQ 100 Index and assume that all dividends are reinvested. Indexes are calculated on a month-end basis.

The comparisons in the graph below are based on historical data and are not indicative of, or intended to forecast, the possible future performance of our common stock.

Comparison of Five Year Cumulative Total Return

Among Broadcom Inc., the S&P 500 Index and the NASDAQ 100 Index

avgo-20221030_g1.jpg

	October 29, 2017	November 4, 2018	November 3, 2019	November 1, 2020	October 31, 2021	October 30, 2022
Broadcom Inc.	$ 100.00	$ 89.74	$ 125.30	$ 154.78	$ 242.74	$ 222.41
S&P 500 Index	$ 100.00	$ 107.58	$ 123.66	$ 134.35	$ 192.01	$ 165.18
NASDAQ 100 Index	$ 100.00	$ 113.29	$ 134.24	$ 183.52	$ 265.05	$ 194.63

The graph and the table above shall not be deemed "filed" with the SEC for the purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing made by us with the SEC, regardless of any general incorporation language in such filing.

ITEM 6. [RESERVED]

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our consolidated financial statements and notes thereto, which appear elsewhere in this Annual Report on Form 10-K. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under the caption "Risk Factors" or in other parts of this Annual Report on Form 10-K.

The following section generally discusses our financial condition and results of operations for our fiscal year ended October 30, 2022 ("fiscal year 2022") compared to our fiscal year ended October 31, 2021 ("fiscal year 2021"). A discussion regarding our financial condition and results of operations for fiscal year 2021 compared to our fiscal year ended November 1, 2020 ("fiscal year 2020") can be found in Part II, Item 7 of our Annual Report on Form 10-K for fiscal year 2021, filed with the Securities and Exchange Commission (the "SEC") on December 17, 2021.

Overview

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Our infrastructure software solutions enable customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. Our portfolio of industry-leading infrastructure and security software is designed to modernize, optimize, and secure the most complex hybrid environments, enabling scalability, agility, automation, insights, resiliency and security. We also offer mission critical fibre channel storage area networking ("FC SAN") products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products.

We have two reportable segments: semiconductor solutions and infrastructure software. Our semiconductor solutions segment includes all of our product lines and intellectual property ("IP") licensing. Our infrastructure software segment includes our mainframe, distributed and cyber security solutions, and our FC SAN business.

Our strategy is to combine best-of-breed technology leadership in semiconductor and infrastructure software solutions, with unmatched scale, on a common sales and administrative platform to deliver a comprehensive suite of infrastructure technology products to the world's leading business and government customers. We seek to achieve this through responsibly financed acquisitions of category-leading businesses and technologies, as well as investing extensively in research and development, to ensure our products retain their technology leadership. This strategy results in a robust business model designed to drive diversified and sustainable operating and financial results.

The demand for our products has been affected in the past, and is likely to continue to be affected in the future, by various factors, including the following:

- gain or loss of significant customers;
- general economic and market conditions in the industries and markets in which we compete;

- our distributors’ product inventory and end customer demand;
- the rate at which our present and future customers and end-users adopt our products and technologies in our target markets, and the rate at which our customers' products that include our technology are accepted in their markets;
- the shift to cloud-based information technology solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers; and
- the timing, rescheduling or cancellation of expected customer orders.

COVID-19 Update

The COVID-19 pandemic and the efforts to control it disrupted, and reduced the efficiency of, normal business activities in much of the world. The pandemic resulted in authorities around the world implementing numerous unprecedented measures that created supply chain and market disruption, impacting our workforce and operations, and those of our customers, contract manufacturers, suppliers and logistics providers.

While the demand environment for our semiconductor products was consistent with our expectations for fiscal year 2022, with robust and increased profitability driven by the supply imbalance, the macroeconomic environment remains uncertain and it may not be sustainable over the longer term. We continue to experience various constraints in our supply chain, including with respect to wafers and substrates. Although supply lead times have stabilized, we continue to have difficulties in obtaining some necessary components and inputs in a timely manner to meet demand.

In response to the pandemic, we have taken extensive measures to protect the health and safety of our employees and contractors at our facilities. We continue to monitor the implications of the pandemic on our operations and may modify our business practices and policies from time to time.

Our ability to predict the impact of the pandemic on our business remains limited and its effects on our business are unlikely to be fully realized, or reflected in our financial results, until future periods.

Fiscal Year Highlights

Highlights during fiscal year 2022 include the following:

- We generated $16,736 million of cash from operations.
- We paid $7,032 million in cash dividends.
- We repurchased $7,000 million of common stock.

Pending Acquisition of VMware, Inc.

On May 26, 2022, we entered into an Agreement and Plan of Merger (the "VMware Merger Agreement") to acquire all of the outstanding shares of VMware, Inc. ("VMware") in a cash-and-stock transaction (the "VMware Merger") that values VMware at approximately $61 billion, based on the closing price of Broadcom common stock on May 25, 2022. We will also assume VMware's closing date outstanding debt, net of expected cash.

Under the terms of the VMware Merger Agreement, each share of VMware common stock issued and outstanding immediately prior to the effective time of the VMware Merger will be indirectly converted into the right to receive, at the election of the holder of such share of VMware common stock, either $142.50 in cash, without interest, or 0.2520 shares of Broadcom common stock. The stockholder election will be subject to proration, such that the total number of shares of VMware common stock entitled to receive cash and the total number of shares of VMware common stock entitled to receive Broadcom common stock, will, in each case, be equal to 50% of the aggregate number of shares of VMware common stock issued and outstanding immediately prior to the effective time of the VMware Merger.

We will assume all outstanding VMware restricted stock unit ("RSU") awards and performance stock unit awards held by continuing employees. The assumed awards will be converted into RSU awards for shares of Broadcom common stock. All outstanding in-the-money VMware stock options and RSU awards held by non-employee directors will be accelerated and converted into the right to receive cash and shares of Broadcom common stock, in equal parts.

Effective upon the effective time of the VMware Merger, one member of the VMware Board of Directors, to be mutually agreed by us and VMware, will be added to our Board of Directors.

In connection with the execution of the VMware Merger Agreement, we entered into a commitment letter on May 26, 2022, with certain financial institutions that committed to provide, subject to the terms and conditions of the commitment letter, a senior unsecured bridge facility in an aggregate principal amount of $32 billion.

The VMware Merger, which is expected to be completed in our fiscal year ending October 29, 2023 ("fiscal year 2023"), is subject to satisfaction or waiver of customary closing conditions, including the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvement Act of 1976 and clearance under the antitrust laws of the European Union and certain other jurisdictions. On October 3, 2022, we registered approximately 59 million shares of our common stock. On November 4, 2022, VMware stockholders adopted the VMware Merger Agreement. We and VMware each have termination rights under the VMware Merger Agreement and, under specified circumstances, upon termination of the agreement, we and VMware would be required to pay the other a termination fee of $1.5 billion.

Net Revenue

A majority of our net revenue is derived from sales of a broad range of semiconductor devices that are incorporated into electronic products, as well as from modules, switches and subsystems. Net revenue is also generated from the sale of software solutions that enable our customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms.

Our overall net revenue, as well as the percentage of total net revenue generated by sales in our semiconductor solutions and infrastructure software segments, have varied from quarter to quarter, due largely to fluctuations in end-market demand, including the effects of seasonality, which are discussed in detail in Part I, Item 1. *Business* under "Seasonality" of this Annual Report on Form 10-K.

Distributors and original equipment manufacturers ("OEMs"), or their contract manufacturers, typically account for the substantial majority of our semiconductor sales. To serve customers around the world, we have strategically developed relationships with large global electronic component distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges. We have established strong relationships with leading OEM customers across multiple target markets. Our direct sales force focuses on supporting our large OEM customers and has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer's organization. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers. Many of our major customer relationships have been in place for many years and are often the result of years of collaborative product development. This has enabled us to build our extensive IP portfolio and develop critical expertise regarding our customers' requirements, including substantial system-level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. We recognize revenue upon the delivery of our products to the distributors, which can cause our quarterly net revenue to fluctuate significantly. Such revenue is reduced for estimated returns and distributor allowances.

Our software customers generally consist of large enterprises that have computing environments from multiple vendors and are highly complex. We believe our enterprise-wide license model will continue to offer our customers reduced complexity, more flexibility and an easier renewal process that will help drive revenue growth.

Costs and Expenses

Cost of products sold. Cost of products sold consists primarily of the costs for semiconductor wafers and other materials, as well as the costs of assembling and testing those products and materials. Such costs include personnel and overhead related to our manufacturing operations, which include stock-based compensation expense, related occupancy, computer services, equipment costs, manufacturing quality, order fulfillment, warranty adjustments, inventory adjustments including write-downs for inventory obsolescence, and acquisition costs, which include direct transaction costs and acquisition-related costs.

Although we outsource a significant portion of our manufacturing activities, we do have some proprietary semiconductor fabrication facilities. If we are unable to utilize our owned fabrication facilities at a desired level, the fixed costs associated with these facilities will not be fully absorbed, resulting in higher average unit costs and lower gross margins.

Cost of subscriptions and services. Cost of subscriptions and services consists of personnel, project costs associated with professional services or support of our subscriptions and services revenue, and allocated facilities costs and other corporate expenses. Personnel costs include stock-based compensation expense.

Total cost of revenue also includes amortization of acquisition-related intangible assets and restructuring charges.

Research and development. Research and development expense consists primarily of personnel costs for our engineers engaged in the design and development of our products and technologies, including stock-based compensation expense. These expenses also include project material costs, third-party fees paid to consultants, prototype development expense, allocated facilities costs and other corporate expenses and computer services costs related to supporting computer tools used in the engineering and design process.

Selling, *general and administrative.* Selling expense consists primarily of compensation and associated costs for sales and marketing personnel, including stock-based compensation expense, sales commissions paid to our independent sales representatives, advertising costs, trade shows, corporate marketing, promotion, travel related to our sales and marketing operations, related occupancy and equipment costs, and other marketing costs. General and administrative expense consists primarily of compensation and associated costs for executive management, finance, human resources and other administrative personnel, including stock-based compensation expense, outside professional fees, allocated facilities costs, acquisition-related costs and other corporate expenses.

Amortization of acquisition-related intangible assets. In connection with our acquisitions, we recognize intangible assets that are being amortized over their estimated useful lives. We also recognize goodwill, which is not amortized, and in-process research and development ("IPR&D"), which is initially capitalized as an indefinite-lived intangible asset, in connection with the acquisitions. Upon completion of each underlying project, IPR&D assets are reclassified as amortizable purchased intangible assets and amortized over their estimated useful lives.

Restructuring, impairment and disposal charges. Restructuring, impairment and disposal charges consist primarily of compensation costs associated with employee exit programs, alignment of our global manufacturing operations, rationalizing product development program costs, facility and lease abandonments, fixed asset impairment, IPR&D impairment, and other exit costs, including curtailment of service or supply agreements.

Interest expense. Interest expense includes coupon interest, commitment fees, accretion of original issue discount, amortization of debt premiums and debt issuance costs, and expenses related to debt modifications or extinguishments.

Other income (expense), net. Other income (expense), net includes interest income, gains or losses on investments, foreign currency remeasurement, and other miscellaneous items.

Provision for income taxes. We have structured our operations to maximize the benefit from tax incentives extended to us in various jurisdictions to encourage investment or employment. Our tax incentives from the Singapore Economic Development Board provide that any qualifying income earned in Singapore is subject to tax incentives or reduced rates of Singapore income tax, subject to our compliance with the conditions specified in these incentives and legislative developments. These Singapore tax incentives are presently expected to expire in November 2025. The corporate income tax rate in Singapore that would otherwise apply to us would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in 2028.

Each tax incentive and tax holiday is also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with any such operating conditions specified, we could, in some instances, be required to refund previously realized material tax benefits, or if such tax incentive or tax holiday is terminated prior to its expiration absent a new incentive applying, we will lose the related tax benefits earlier than scheduled. We may elect to modify our operational structure and tax strategy, which may not be as beneficial to us as the benefits provided under the present tax concession arrangements. Before taking into consideration the effects of the U.S. Tax Cuts and Jobs Act and other indirect tax impacts, the effect of these tax incentives and tax holiday was to decrease the provision for income taxes by approximately $1,821 million and $1,156 million for fiscal years 2022 and 2021, respectively.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded, we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows. In addition, taxable income in any jurisdiction is dependent upon acceptance of our operational practices and intercompany transfer pricing by local tax authorities as being on an arm's length basis. Due to inconsistencies in application of the arm's length standard among taxing authorities, as well as lack of adequate treaty-based protection, transfer pricing challenges by tax authorities could, if successful, substantially increase our income tax expense.

Critical Accounting Estimates

The preparation of financial statements in accordance with generally accepted accounting principles in the United States ("GAAP") requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. We base our estimates and assumptions on current facts, historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the accrual of costs and expenses that are not readily apparent from other sources. Our actual financial results may differ materially and adversely from our estimates. Our critical accounting policies are those that affect our historical financial statements materially and involve difficult, subjective or complex judgments by management. Those policies include revenue recognition, valuation of goodwill and long-lived assets, and income taxes. See Note 2. "Summary of Significant Accounting Policies" included in Part II, Item 8. of this Annual Report on Form 10-K for further information on our critical accounting policies and estimates.

Revenue recognition. We account for a contract with a customer when both parties have approved the contract and are committed to perform their respective obligations, each party's rights can be identified, payment terms can be identified, the contract has commercial substance, and it is probable we will collect substantially all of the consideration we are entitled to. Revenue is recognized when, or as, performance obligations are satisfied by transferring control of a promised product or service to a customer. Our products and services can be broadly categorized as sales of products and subscriptions and services.

We recognize products revenue from sales to direct customers and distributors when control transfers to the customer. An allowance for distributor credits covering price adjustments is made based on our estimate of historical experience rates as well as considering economic conditions and contractual terms. To date, actual distributor claims activity has been materially consistent with the provisions we have made based on our historical estimates. However, because of the inherent nature of estimates, there is always a risk that there could be significant differences between actual amounts and our estimates. Different judgments or estimates could result in variances that might be significant to reported operating results. We also record reductions of revenue for rebates in the same period that the related revenue is recorded. We accrue 100% of potential rebates at the time of sale. We reverse the accrual of unclaimed rebate amounts as specific rebate programs contractually end and when we believe unclaimed rebates are no longer subject to payment and will not be paid. Thus, the reversal of unclaimed rebates may have a positive impact on our net revenue and net income in subsequent periods.

Valuation of goodwill and long-lived assets. We perform an annual impairment review of our goodwill during the fourth fiscal quarter of each year, and more frequently if we believe indicators of impairment exist. The process of evaluating the potential impairment of goodwill is highly subjective and requires significant judgment. To review for impairment, we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. These factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit’s net book value.

Determining the fair value of a reporting unit involves the use of significant estimates and assumptions. Our goodwill impairment test uses both the income approach and the market approach to estimate a reporting unit's fair value. The income approach is based on the discounted cash flow method that uses the reporting unit estimates for forecasted future financial performance, including revenues, operating expenses, and taxes, as well as working capital and capital asset requirements. These estimates are developed as part of our long-term planning process based on assumed market segment growth rates and our assumed market segment share, estimated costs based on historical data and various internal estimates. Projected cash flows are then discounted to a present value employing a discount rate that properly accounts for the estimated market weighted-average cost of capital, as well as any risk unique to the subject cash flows. The market approach is based on weighting the financial multiples of comparable companies and applying a control premium. A reporting unit's carrying value represents the assignment of various assets and liabilities, excluding certain corporate assets and liabilities, such as cash and debt.

We assess the impairment of long-lived assets, including purchased IPR&D, property, plant and equipment, and intangible assets, whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. Factors we consider important which could trigger an impairment review include: (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, or (iii) significant negative industry or economic trends. The process of evaluating the potential impairment of long-lived assets under the accounting guidance on property, plant and equipment, and intangible assets is also highly subjective and requires significant judgment. In order to estimate the fair value of long-lived assets, we typically make various assumptions about the future prospects of our business or the part of our business to which the long-lived assets relate. We also consider market factors specific to the business and estimate future cash flows to be generated by the business, which requires significant judgment as it is based on assumptions about market demand for our products over a number of future years. Based on these assumptions and estimates, we determine whether we need to take an impairment charge to reduce the value of the long-lived assets stated on our consolidated balance sheets to reflect their estimated fair value. Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors, such as the real estate market, industry and economic trends, and internal factors, such as changes in our business strategy and our internal forecasts. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, changes in assumptions and estimates could materially impact our reported financial results.

Income taxes. Significant management judgment is required in developing our provision for or benefit from income taxes, including the determination of deferred tax assets and liabilities and any valuation allowances that might be required against the deferred tax assets. We have considered projected future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for valuation allowances. An adjustment to the valuation allowance will either increase or decrease our provision for or benefit from income taxes in the period such determination is made. In evaluating the exposure associated with various tax filing positions, we accrue an income tax liability when such positions do not meet the more-likely-than-not threshold for recognition.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in a multitude of jurisdictions. We recognize potential liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on our estimate of whether, and the extent to which, additional taxes, interest, and penalties will be due. If our estimate of income tax liabilities proves to be less than the actual amount ultimately assessed, a further charge to tax expense would be required. If the payment of these amounts ultimately proves to be unnecessary, the reversal of the accrued liabilities would result in tax benefits being recognized in the period when we determine the liabilities no longer exist.

Fiscal Year Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal years 2022, 2021 and 2020 consisted of 52 weeks.

The financial statements included in Part II, Item 8. of this Annual Report on Form 10-K are presented in accordance with GAAP and expressed in U.S. dollars.

Results of Operations

Fiscal Year 2022 Compared to Fiscal Year 2021

The following table sets forth our results of operations for the periods presented:

	Fiscal Year Ended			
	October 30, 2022	October 31, 2021	October 30, 2022	October 31, 2021
	(In millions)		(As a percentage of net revenue)	
Statements of Operations Data:				
Net revenue:				
Products	$ 26,277	$ 20,886	79 %	76 %
Subscriptions and services	6,926	6,564	21	24
Total net revenue	33,203	27,450	100	100
Cost of revenue:				
Cost of products sold	7,629	6,555	23	24
Cost of subscriptions and services	627	607	2	2
Amortization of acquisition-related intangible assets	2,847	3,427	8	13
Restructuring charges	5	17	—	—
Total cost of revenue	11,108	10,606	33	39
Gross margin	22,095	16,844	67	61
Research and development	4,919	4,854	15	18
Selling, general and administrative	1,382	1,347	4	5
Amortization of acquisition-related intangible assets	1,512	1,976	5	7
Restructuring, impairment and disposal charges	57	148	—	—
Total operating expenses	7,870	8,325	24	30
Operating income	$ 14,225	$ 8,519	43 %	31 %

Net Revenue

A relatively small number of customers account for a significant portion of our net revenue. Sales of products to distributors accounted for 56% and 53% of our net revenue for fiscal years 2022 and 2021, respectively. Direct sales to WT Microelectronics Co., Ltd., a distributor, accounted for 20% and 18% of our net revenue for fiscal years 2022 and 2021, respectively. We believe aggregate sales to our top five end customers, through all channels, accounted for approximately 35% of our net revenue for each of fiscal years 2022 and 2021. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 20% of our net revenue for each of fiscal years 2022 and 2021. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

From time to time, some of our key semiconductor customers place large orders or delay orders, causing our quarterly net revenue to fluctuate significantly. This is particularly true of our wireless products as fluctuations may be magnified by the timing of launches, and seasonal variations in sales, of mobile devices. The COVID-19 pandemic and macroeconomic uncertainties may cause our net revenue to fluctuate significantly and impact our results of operations.

Although we recognize revenue for the majority of our products when title and control transfer in Penang, Malaysia, we disclose net revenue by country based primarily on the geographic shipment or delivery location specified by our distributors, OEMs, contract manufacturers, channel partners, or software customers. In each of fiscal years 2022 and 2021, approximately 35% of our net revenue came from shipments or deliveries to China (including Hong Kong). However, the end customers for either our products or for the end products into which our products are incorporated, are frequently located in countries other than China (including Hong Kong). As a result, we believe that a substantially smaller percentage of our net revenue is ultimately dependent on sales of either our product or our customers' product incorporating our product, to end customers located in China (including Hong Kong).

The following tables set forth net revenue by segment for the periods presented:

Net Revenue by Segment	Fiscal Year Ended October 30, 2022	Fiscal Year Ended October 31, 2021	$ Change	% Change
	(In millions, except percentages)			
Semiconductor solutions	$ 25,818	$ 20,383	$ 5,435	27 %
Infrastructure software	7,385	7,067	318	4 %
Total net revenue	$ 33,203	$ 27,450	$ 5,753	21 %

Net Revenue by Segment	Fiscal Year Ended October 30, 2022	Fiscal Year Ended October 31, 2021
	(As a percentage of net revenue)	
Semiconductor solutions	78 %	74 %
Infrastructure software	22	26
Total net revenue	100 %	100 %

Net revenue from our semiconductor solutions segment increased due to strong product demand, primarily for networking, server storage and broadband products, as well as higher demand for our wireless content in mobile devices. Net revenue from our infrastructure software segment increased primarily due to higher demand for our mainframe solutions and FC SAN products.

Gross Margin

Gross margin was $22,095 million, or 67% of net revenue, for fiscal year 2022, compared to $16,844 million, or 61% of net revenue, for fiscal year 2021. The increase was primarily due to lower amortization of acquisition-related intangible assets, mainly from our 2016 acquisition of Broadcom Corporation and, to a lesser extent, favorable margin within our semiconductor solutions segment.

Research and Development Expense

Research and development expense increased $65 million, or 1%, in fiscal year 2022, compared to the prior fiscal year. The increase was primarily due to higher variable employee compensation expense and engineering project costs, partially offset by lower stock-based compensation expense reflecting the full vesting of certain equity awards and the effects of forfeitures.

Selling, General and Administrative Expense

Selling, general and administrative expense increased $35 million, or 3%, in fiscal year 2022, compared to the prior fiscal year. The increase was primarily due to higher variable employee compensation expense, offset in part by lower stock-based compensation expense.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets recognized in operating expenses decreased $464 million, or 23%, in fiscal year 2022, compared to the prior fiscal year. The decrease was primarily due to lower amortization of certain intangible assets from our acquisition of CA, Inc.

Restructuring, Impairment and Disposal Charges

Restructuring, impairment and disposal charges recognized in operating expenses decreased $91 million, or 61%, in fiscal year 2022, compared to the prior fiscal year. The decrease was primarily due to lower employee termination costs following the completion of key restructuring activities from acquisitions.

Stock-Based Compensation Expense

Total stock-based compensation expense was $1,533 million and $1,704 million for fiscal years 2022 and 2021, respectively. The decrease primarily reflects the full vesting of certain equity awards and the effect of forfeitures.

The following table sets forth the total unrecognized compensation cost related to unvested stock-based awards outstanding and expected to vest as of October 30, 2022, which we expect to recognize over the remaining weighted-average service period of 2.7 years.

[Table of Contents](#)

Fiscal Year:	Unrecognized Compensation Cost, Net of Expected Forfeitures
	(In millions)
2023	$ 1,221
2024	846
2025	507
2026	130
Total	$ 2,704

During the first quarter of fiscal year ended November 3, 2019 ("fiscal year 2019"), our Compensation Committee approved a broad-based program of multi-year equity grants of time- and market-based RSUs (the "Multi-Year Equity Awards") in lieu of our annual employee equity awards historically granted on March 15 of each year. Each Multi-Year Equity Award vests on the same basis as four annual grants made March 15 of each year, beginning in fiscal year 2019, with successive four-year vesting periods. We recognize stock-based compensation expense related to the Multi-Year Equity Awards from the grant date through their respective vesting date, ranging from 4 years to 7 years.

Segment Operating Results

Operating Income by Segment	Fiscal Year Ended October 30, 2022	Fiscal Year Ended October 31, 2021	$ Change	% Change
	(In millions, except percentages)			
Semiconductor solutions	$ 15,075	$ 10,976	$ 4,099	37 %
Infrastructure software	5,219	4,936	283	6 %
Unallocated expenses	(6,069)	(7,393)	1,324	(18)%
Total operating income	$ 14,225	$ 8,519	$ 5,706	67 %

Operating income from our semiconductor solutions segment increased primarily due to higher net revenue from networking, server storage, broadband, and wireless products, as well as higher gross margin. Operating income from our infrastructure software segment increased primarily due to higher demand for our mainframe solutions and FC SAN products.

Unallocated expenses include amortization of acquisition-related intangible assets; stock-based compensation expense; restructuring, impairment and disposal charges; acquisition-related costs; and other costs that are not used in evaluating the results of, or in allocating resources to, our segments. Unallocated expenses decreased 18% in fiscal year 2022, compared to the prior fiscal year, primarily due to lower amortization of acquisition-related intangible assets.

Non-Operating Income and Expenses

Interest expense. Interest expense was $1,737 million and $1,885 million for fiscal years 2022 and 2021, respectively. The decrease was primarily due to lower losses on extinguishment of debt. We expect to incur additional interest expense in future periods as a result of indebtedness associated with the pending VMware Merger.

Other income (expense), net. Other income (expense), net, includes interest income, gains or losses on investments, foreign currency remeasurement and other miscellaneous items. Other expense, net, was $54 million for fiscal year 2022, compared to other income, net, of $131 million for fiscal year 2021. The change was primarily due to changes in investment gains or losses.

Provision for income taxes. The provision for income taxes was $939 million and $29 million for fiscal years 2022 and 2021, respectively. The increase was primarily due to higher income from continuing operations before income taxes.

Liquidity and Capital Resources

The following section discusses our principal liquidity and capital resources as well as our primary liquidity requirements and uses of cash. Our cash and cash equivalents are maintained in highly liquid investments with remaining maturities of 90 days or less at the time of purchase. We believe our cash equivalents are liquid and accessible.

Our primary sources of liquidity as of October 30, 2022 consisted of: (i) $12,416 million in cash and cash equivalents, (ii) cash we expect to generate from operations and (iii) available capacity under our $7.5 billion unsecured revolving credit facility (the “Revolving Facility”). In addition, we may also generate cash from the sale of assets and debt or equity financing from time to time.

Our short-term and long-term liquidity requirements primarily arise from: (i) business acquisitions and investments we may make from time to time, including the pending VMware Merger, (ii) working capital requirements, (iii) research and development and capital expenditure needs, (iv) cash dividend payments (if and when declared by our Board of Directors), (v) interest and principal payments related to our $41,218 million of outstanding indebtedness, (vi) share repurchases, and (vii) payment of income taxes. Our ability to fund these requirements will depend, in part, on our future cash flows, which are determined by our future operating performance and, therefore, subject to prevailing global macroeconomic conditions and financial, business and other factors, some of which are beyond our control. We expect capital expenditures to be higher in fiscal year 2023 as compared to fiscal year 2022. Our debt and liquidity needs will increase as a result of the pending VMware Merger, and we intend to fund the cash portion of the consideration with $32 billion in new, fully committed debt financing.

We believe that our cash and cash equivalents on hand, cash flows from operations, and the Revolving Facility, as well as the committed debt funding related to the pending VMware Merger, will provide sufficient liquidity to operate our business and fund our current and assumed obligations for at least the next 12 months. For additional information regarding our cash requirement from contractual obligations, indebtedness and lease obligations, see Note 14. “Commitments and Contingencies”, Note 10. “Borrowings” and Note 6. “Leases” in Part II, Item 8 of this Annual Report on Form 10-K.

From time to time, we engage in discussions with third parties regarding potential acquisitions of, or investments in, businesses, technologies and product lines. Any such transaction, or evaluation of potential transactions, could require significant use of our cash and cash equivalents, or require us to increase our borrowings to fund such transactions. If we do not have sufficient cash to fund our operations or finance growth opportunities, including acquisitions, or unanticipated capital expenditures, our business and financial condition could suffer. In such circumstances, we may seek to obtain new debt or equity financing. However, we cannot assure you that such additional financing will be available on terms acceptable to us or at all. Our ability to service our senior unsecured notes and any other indebtedness we may incur will depend on our ability to generate cash in the future. We may also elect to sell additional debt or equity securities for reasons other than those specified above.

In addition, we may, at any time and from time to time, seek to retire or purchase our outstanding debt through cash tenders and/or exchanges for equity or debt, in open-market purchases, privately negotiated transactions or otherwise. Such tenders, exchanges or purchases, if any, will be upon such terms and at such prices as we may determine, and will depend on prevailing market conditions, our liquidity requirements, contractual restrictions and other factors. The amounts involved may be material.

Working Capital

Working capital increased to $11,452 million at October 30, 2022 from $10,305 million at October 31, 2021. The increase was attributable to the following:

- Accounts receivable increased to $2,958 million at October 30, 2022 from $2,071 million at October 31, 2021, primarily due to revenue linearity and less receivables sold through factoring arrangements.
- Inventory increased to $1,925 million at October 30, 2022 from $1,297 million at October 31, 2021, primarily to support customer demand and due to higher material costs.
- Cash and cash equivalents increased to $12,416 million at October 30, 2022 from $12,163 million at October 31, 2021, primarily due to $16,736 million in net cash

provided by operating activities and $1,935 million in proceeds from long-term borrowings, partially offset by $7,032 million of dividend payments, $7,000 million of common stock repurchases, $2,361 million of debt payments, and $1,455 million of employee withholding tax payments related to net settled equity awards.

- Other current assets increased to $1,205 million at October 30, 2022 from $1,055 million at October 31, 2021, primarily due to an increase in prepaid taxes, offset in part by a decrease in short-term investments.

These increases in working capital were offset in part by the following:

- Other current liabilities increased to $4,412 million at October 30, 2022 from $3,839 million at October 31, 2021, primarily due to increases in contract liabilities, taxes payable and interest payable.
- Current portion of long-term debt increased to $440 million at October 30, 2022 from $290 million at October 31, 2021, primarily due to certain debt instruments becoming due within the next twelve months, offset in part by repayments.

- Employee compensation and benefits increased to $1,202 million at October 30, 2022 from $1,066 million at October 31, 2021, primarily due to higher variable compensation based on current fiscal year performance.

Capital Returns

Cash Dividends Declared and Paid	Fiscal Year Ended October 30, 2022	Fiscal Year Ended October 31, 2021
	(In millions, except per share data)	
Dividends per share to common stockholders	$ 16.40	$ 14.40
Dividends to common stockholders	$ 6,733	$ 5,913
Dividends per share to preferred stockholders	$ 80.00	$ 80.00
Dividends to preferred stockholders	$ 299	$ 299

In December 2021, our Board of Directors authorized a stock repurchase program to repurchase up to $10 billion of our common stock from time to time on or prior to December 31, 2022. During fiscal year 2022, we repurchased and retired approximately 12 million shares of our common stock for $7 billion under this stock repurchase program. In May 2022, our Board of Directors authorized another stock repurchase program to repurchase up to an additional $10 billion of our common stock from time to time through December 31, 2023.

Repurchases under our stock repurchase programs may be effected through a variety of methods, including open market or privately negotiated purchases. The timing and amount of shares repurchased will depend on the stock price, business and market conditions, corporate and regulatory requirements, alternative investment opportunities, acquisition opportunities, and other factors. We are not obligated to repurchase any specific amount of shares of common stock, and the stock repurchase programs may be suspended or terminated at any time.

During fiscal years 2022 and 2021, we paid approximately $1,455 million and $1,299 million, respectively, in employee withholding taxes due upon the vesting of net settled equity awards. We withheld approximately 3 million shares of common stock from employees in connection with such net share settlements during each of fiscal years 2022 and 2021.

Cash Flows

	Fiscal Year Ended October 30, 2022	Fiscal Year Ended October 31, 2021
	(In millions)	
Net cash provided by operating activities	$ 16,736	$ 13,764
Net cash used in investing activities	(667)	(245)
Net cash used in financing activities	(15,816)	(8,974)
Net change in cash and cash equivalents	$ 253	$ 4,545

Operating Activities

Cash provided by operating activities consisted of net income adjusted for certain non-cash and other items and changes in assets and liabilities. The $2,972 million increase in cash provided by operations during fiscal year 2022 compared to fiscal year 2021 was due to $4,759 million higher net income and certain non-cash adjustments including deferred taxes and other non-cash taxes, offset by a decrease in amortization of intangible assets and stock-based compensation, as well as a $1,527 million decrease resulting from changes in operating assets and liabilities.

Investing Activities

Cash flows from investing activities primarily consisted of cash used for acquisitions, capital expenditures, and sales and purchases of investments. The $422 million increase in cash used in investing activities for fiscal year 2022 compared to fiscal year 2021 was primarily due to a $238 million increase in cash paid for acquisitions and $169 million lower net proceeds from sales of investments.

Financing Activities

Cash flows from financing activities primarily consisted of dividend payments, stock repurchases, proceeds and payments related to our long-term borrowings, and employee withholding tax payments related to net settled equity awards. The $6,842 million increase in cash used in financing activities for fiscal year 2022 compared to fiscal year 2021 was primarily due to $7,000 million in common stock repurchases, a $820 million increase in dividend payments, and a $156 million increase in employee withholding tax payments related to net settled equity awards, offset in part by a $1,165 million change in net borrowing activities.

Accounting Changes and Recent Accounting Standards

For a description of accounting changes and recent accounting standards, including the expected dates of adoption and estimated effects, if any, in our consolidated financial statements, see Note 2. “Summary of Significant Accounting Policies” included in Part II, Item 8. of this Annual Report on Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Exchange Risk

From time to time, we use foreign exchange forward contracts to hedge a portion of our exposures to changes in currency exchange rates, which result from our global operating and financing activities. We do not use derivative financial instruments for trading or speculative purposes. Gains and losses from foreign currency transactions, as well as foreign exchange forward contracts, were not significant for any period presented in the consolidated financial statements included in this Form 10-K. As of October 30, 2022, we did not have any outstanding foreign exchange forward contracts.

Interest Rate Risk

Changes in interest rates affect the fair value of our outstanding debt. As of October 30, 2022, we had $41.2 billion in principal amount of debt outstanding. The carrying amount of the debt was $39.5 billion, and the estimated aggregate fair value of debt was $33.0 billion. As of October 30, 2022, a hypothetical 50 basis points increase or decrease in market interest rates would change the fair value of debt by a decrease or increase of approximately $1.6 billion. However, this hypothetical change in interest rates would not impact the interest expense on our debt as we only had fixed rate senior notes outstanding. To hedge variability of cash flows due to changes in the benchmark interest rate of anticipated future debt issuances, we have entered, and in the future may enter, into treasury rate lock contracts.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

BROADCOM INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Broadcom Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Broadcom Inc. and its subsidiaries (the "Company") as of October 30, 2022 and October 31, 2021, and the related consolidated statements of operations, of comprehensive income, of stockholders' equity and of cash flows for each of the three years in the period ended October 30, 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 October 30, 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 October 30, 2022 and October 31, 2021, and the results of its operations and its cash flows for each of the three years in the period ended October 30, 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 October 30, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 6 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in fiscal 2020.

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.

Uncertain Tax Positions (UTPs)

As described in Notes 2 and 12 to the consolidated financial statements, the gross unrecognized tax benefits balance was $5,117 million as of October 30, 2022. As management has disclosed, management evaluates the exposure associated with various tax filing positions and accrues an income tax liability when such positions do not meet the more-likely-than-not threshold for recognition. A tax benefit from an UTP may be recognized when it is more likely than not that the position will be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits.

The principal considerations for our determination that performing procedures relating to the UTPs is a critical audit matter are (i) the significant judgment by management when evaluating the technical merits of these tax positions, (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating the technical merits of the tax positions, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

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 identification and recognition of the income tax liability for UTPs, including controls addressing the completeness of the UTPs and the measurement of the income tax liability. These procedures also included, among others, (i) testing management's process for identifying potential new UTPs, (ii) for a selection of UTPs, evaluating possible outcomes, and (iii) for a selection of UTPs, testing the calculation of the income tax liability by jurisdiction, including management's assessment of the technical merits of tax positions and estimates of the amount of tax benefit expected to be sustained. Professionals with specialized skill and knowledge were used to assist in (i) the evaluation of the completeness of management's identification of the UTPs and (ii) for a selection of UTPs, the evaluation of the reasonableness of management's assessment of whether the tax positions are more-likely-than-not of being sustained, the amount of potential benefit to be realized, and the application of relevant tax laws.

/s/ PricewaterhouseCoopers LLP

San Jose, California
December 16, 2022

We have served as the Company's auditor since 2006.

BROADCOM INC.
CONSOLIDATED BALANCE SHEETS

	October 30, 2022	October 31, 2021
	(In millions, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 12,416	$ 12,163
Trade accounts receivable, net	2,958	2,071
Inventory	1,925	1,297
Other current assets	1,205	1,055
Total current assets	18,504	16,586
Long-term assets:		
Property, plant and equipment, net	2,223	2,348
Goodwill	43,614	43,450
Intangible assets, net	7,111	11,374
Other long-term assets	1,797	1,812
Total assets	$ 73,249	$ 75,570
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 998	$ 1,086
Employee compensation and benefits	1,202	1,066
Current portion of long-term debt	440	290
Other current liabilities	4,412	3,839
Total current liabilities	7,052	6,281
Long-term liabilities:		
Long-term debt	39,075	39,440
Other long-term liabilities	4,413	4,860
Total liabilities	50,540	50,581
Commitments and contingencies (Note 14)		
Preferred stock dividend obligation	—	27
Stockholders’ equity:		
Preferred stock, $0.001 par value; 100 shares authorized; 8.00% Mandatory Convertible Preferred Stock, Series A, 0 and 4 shares issued and outstanding; aggregate liquidation value of $0 and $3,737 as of October 30, 2022 and October 31, 2021, respectively	—	—
Common stock, $0.001 par value; 2,900 shares authorized; 418 and 413 shares issued and outstanding as of October 30, 2022 and October 31, 2021, respectively	—	—
Additional paid-in capital	21,159	24,330
Retained earnings	1,604	748
Accumulated other comprehensive loss	(54)	(116)
Total stockholders’ equity	22,709	24,962
Total liabilities and equity	$ 73,249	$ 75,570

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Fiscal Year Ended		
	October 30, 2022	October 31, 2021	November 1, 2020
	(In millions, except per share data)		
Net revenue:			
Products	$ 26,277	$ 20,886	$ 17,435
Subscriptions and services	6,926	6,564	6,453
Total net revenue	33,203	27,450	23,888
Cost of revenue:			
Cost of products sold	7,629	6,555	5,892
Cost of subscriptions and services	627	607	626
Amortization of acquisition-related intangible assets	2,847	3,427	3,819
Restructuring charges	5	17	35
Total cost of revenue	11,108	10,606	10,372
Gross margin	22,095	16,844	13,516
Research and development	4,919	4,854	4,968
Selling, general and administrative	1,382	1,347	1,935
Amortization of acquisition-related intangible assets	1,512	1,976	2,401
Restructuring, impairment and disposal charges	57	148	198
Total operating expenses	7,870	8,325	9,502
Operating income	14,225	8,519	4,014
Interest expense	(1,737)	(1,885)	(1,777)
Other income (expense), net	(54)	131	206
Income from continuing operations before income taxes	12,434	6,765	2,443
Provision for (benefit from) income taxes	939	29	(518)
Income from continuing operations	11,495	6,736	2,961
Loss from discontinued operations, net of income taxes	—	—	(1)
Net income	11,495	6,736	2,960
Dividends on preferred stock	(272)	(299)	(297)
Net income attributable to common stock	$ 11,223	$ 6,437	$ 2,663
Net income per share attributable to common stock:			
Basic	$ 27.44	$ 15.70	$ 6.62
Diluted	$ 26.53	$ 15.00	$ 6.33
Weighted-average shares used in per share calculations:			
Basic	409	410	402
Diluted	423	429	421

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Fiscal Year Ended		
	October 30, 2022	October 31, 2021	November 1, 2020
		(In millions)	
Net income	$ 11,495	$ 6,736	$ 2,960
Other comprehensive income (loss), net of tax:			
Change in unrealized gain on derivative instruments	37	—	—
Change in actuarial loss and prior service costs associated with defined benefit plans	25	(8)	24
Other comprehensive income (loss), net of tax	62	(8)	24
Comprehensive income	$ 11,557	$ 6,728	$ 2,984

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Fiscal Year Ended		
	October 30, 2022	October 31, 2021	November 1, 2020
		(In millions)	
Cash flows from operating activities:			
Net income	$ 11,495	$ 6,736	$ 2,960
Adjustments to reconcile net income to net cash provided by operating activities:			
Amortization of intangible and right-of-use assets	4,455	5,502	6,335
Depreciation	529	539	570
Stock-based compensation	1,533	1,704	1,976
Deferred taxes and other non-cash taxes	(34)	(809)	(1,142)
Loss on debt extinguishment	100	198	169
Non-cash restructuring, impairment and disposal charges	13	38	44
Non-cash interest expense	129	96	108
Other	170	(113)	(52)
Changes in assets and liabilities, net of acquisitions and disposals:			
Trade accounts receivable, net	(870)	210	981
Inventory	(627)	(294)	(31)
Accounts payable	(79)	243	(3)
Employee compensation and benefits	136	186	217
Other current assets and current liabilities	222	(177)	331
Other long-term assets and long-term liabilities	(436)	(295)	(402)
Net cash provided by operating activities	16,736	13,764	12,061
Cash flows from investing activities:			
Acquisitions of businesses, net of cash acquired	(246)	(8)	(10,872)
Proceeds from sales of businesses	—	45	218
Purchases of property, plant and equipment	(424)	(443)	(463)
Purchases of investments	(200)	—	—
Sales of investments	200	169	—
Other	3	(8)	8
Net cash used in investing activities	(667)	(245)	(11,109)
Cash flows from financing activities:			
Proceeds from long-term borrowings	1,935	9,904	27,802
Payments on debt obligations	(2,361)	(11,495)	(18,814)
Other borrowings, net	—	—	(1,285)
Payments of dividends	(7,032)	(6,212)	(5,534)
Repurchases of common stock - repurchase program	(7,000)	—	—
Shares repurchased for tax withholdings on vesting of equity awards	(1,455)	(1,299)	(765)
Issuance of common stock	114	170	276
Other	(17)	(42)	(69)
Net cash provided by (used in) financing activities	(15,816)	(8,974)	1,611
Net change in cash and cash equivalents	253	4,545	2,563
Cash and cash equivalents at beginning of period	12,163	7,618	5,055
Cash and cash equivalents at end of period	$ 12,416	$ 12,163	$ 7,618
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 1,386	$ 1,565	$ 1,408
Cash paid for income taxes	$ 908	$ 775	$ 501

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	8.00% Mandatory Convertible Preferred Stock		Common Stock					
	Shares	Par Value	Shares	Par Value	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
					(In millions)			
Balance as of November 3, 2019	4	$ —	398	$ —	$25,081	$ —	$ (140)	$24,941
Net income	—	—	—	—	—	2,960	—	2,960
Other comprehensive income	—	—	—	—	—	—	24	24
Cumulative effect of accounting change	—	—	—	—	—	(10)	8	(2)
Fair value of partially vested equity awards assumed in connection with an acquisition	—	—	—	—	1	—	—	1
Dividends to common stockholders	—	—	—	—	(2,582)	(2,653)	—	(5,235)
Dividends to preferred stockholders	—	—	—	—	—	(297)	—	(297)
Common stock issued	—	—	12	—	276	—	—	276
Stock-based compensation	—	—	—	—	1,976	—	—	1,976
Shares repurchased for tax withholdings on vesting of equity awards	—	—	(3)	—	(770)	—	—	(770)
Balance as of November 1, 2020	4	—	407	—	23,982	—	(108)	23,874
Net income	—	—	—	—	—	6,736	—	6,736
Other comprehensive loss	—	—	—	—	—	—	(8)	(8)
Dividends to common stockholders	—	—	—	—	(224)	(5,689)	—	(5,913)
Dividends to preferred stockholders	—	—	—	—	—	(299)	—	(299)
Common stock issued	—	—	9	—	170	—	—	170
Stock-based compensation	—	—	—	—	1,704	—	—	1,704
Shares repurchased for tax withholdings on vesting of equity awards	—	—	(3)	—	(1,302)	—	—	(1,302)
Balance as of October 31, 2021	4	—	413	—	24,330	748	(116)	24,962
Net income	—	—	—	—	—	11,495	—	11,495
Other comprehensive income	—	—	—	—	—	—	62	62
Fair value of partially vested equity awards assumed in connection with an acquisition	—	—	—	—	4	—	—	4
Dividends to common stockholders	—	—	—	—	(50)	(6,683)	—	(6,733)
Dividends to preferred stockholders	—	—	—	—	—	(272)	—	(272)
Common stock issued	—	—	8	—	114	—	—	114
Stock-based compensation	—	—	—	—	1,533	—	—	1,533
Repurchases of common stock	—	—	(12)	—	(3,316)	(3,684)	—	(7,000)

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Overview and Basis of Presentation

Overview

Broadcom Inc. ("Broadcom"), a Delaware corporation, is a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Our infrastructure software solutions enable customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. Our portfolio of industry-leading infrastructure and security software is designed to modernize, optimize, and secure the most complex hybrid environments, enabling scalability, agility, automation, insights, resiliency and security. We also offer mission critical fibre channel storage area networking ("FC SAN") products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products. Unless stated otherwise or the context otherwise requires, references to "Broadcom," "we," "our," and "us" mean Broadcom and its consolidated subsidiaries.

Basis of Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal year ended October 30, 2022 ("fiscal year 2022") was a 52-week fiscal year. The first quarter of our fiscal year 2022 ended on January 30, 2022, the second quarter ended on May 1, 2022 and the third quarter ended on July 31, 2022. Our fiscal year ended October 31, 2021 ("fiscal year 2021") and fiscal year ended November 1, 2020 ("fiscal year 2020") were both 52-week fiscal years.

On November 4, 2019, we completed the purchase of certain assets and assumption of certain liabilities of the Symantec Corporation Enterprise Security business (the "Symantec Business"). We have two reportable segments: semiconductor solutions and infrastructure software. See Note 13. "Segment Information" for additional information.

The accompanying consolidated financial statements include the accounts of Broadcom and its subsidiaries and have been prepared in accordance with generally accepted accounting principles in the United States ("GAAP"). All intercompany balances and transactions have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Foreign currency remeasurement. We operate in a U.S. dollar functional currency environment. Foreign currency assets and liabilities for monetary accounts are remeasured into U.S. dollars at current exchange rates. Non-monetary items such as inventory and property, plant and equipment, are measured and recorded at historical exchange rates. The effects of foreign currency remeasurement were not material for any period presented.

Use of estimates. The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The inputs into certain of these estimates and assumptions include the consideration of the economic impact of the COVID-19 pandemic, and many of these estimates could require increased judgment and carry a higher degree of variability and volatility. Actual results could differ materially from these estimates, and such differences could affect the results of operations reported in future periods.

Cash and cash equivalents. We consider all highly liquid investment securities with original maturities of three months or less at the date of purchase to be cash equivalents. We determine the appropriate classification of our cash and cash equivalents at the time of purchase.

Trade accounts receivable, net. Trade accounts receivable are recognized at the invoiced amount and do not bear interest. Accounts receivable are reduced by an allowance for doubtful accounts, which is our best estimate of the expected credit losses in our existing accounts receivable. We determine the allowance based on historical experience, current economic conditions and certain forward-looking information, among other factors. Allowances for doubtful accounts were not material as of October 30, 2022 or October 31, 2021. Accounts receivable are also recognized net of sales returns and distributor credit allowances. These amounts are recognized when it is both probable and estimable that discounts will be granted or products will be returned. Allowances for sales returns and distributor credit allowances as of October 30, 2022 and October 31, 2021 were $126 million and $129 million, respectively.

Concentrations of credit risk and significant customers. Our cash, cash equivalents and accounts receivable are potentially subject to concentration of credit risk. Cash and cash equivalents may be redeemable upon demand and are maintained with financial institutions that management believes are of high credit quality and therefore bear minimal credit risk. We seek to mitigate our credit risks by spreading such risks across multiple counterparties and monitoring the risk profile of these counterparties. Our accounts receivable are derived from revenue earned from customers located both within and outside the U.S. We mitigate collection risks from our customers by performing regular credit evaluations of our customers' financial conditions, and require collateral, such as letters of credit and bank guarantees, in certain circumstances.

Concentration of other risks. We operate in markets that are highly competitive and rapidly changing. Significant technological changes, shifting customer needs, the emergence of competitive products with new capabilities, general economic conditions worldwide, the ability to safeguard patents and other intellectual property ("IP") in a rapidly evolving market and reliance on assembly and test subcontractors, third-party wafer fabricators and independent distributors and other factors could affect our financial results.

Inventory. We value our inventory at the lower of actual cost or net realizable value of the inventory, with cost being determined under the first-in, first-out method. We record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. The excess and obsolete balance determined by this analysis becomes the basis for our excess and obsolete inventory charge and the written-down value of the inventory becomes its new cost basis.

Retirement benefit plans. For defined benefit pension plans, we consider various factors in determining our respective benefit obligations and net periodic benefit (income) cost, including the number of employees that we expect to receive benefits, their salary levels and years of service, the expected return on plan assets, the discount rate, the timing of the payment of benefits, and other actuarial assumptions. If the actual results and events of the benefit plans differ from our current assumptions, the benefit obligations may be over- or under-valued.

The key assumptions are the discount rate and the expected rate of return on plan assets. The U.S. discount rates are based on a hypothetical yield curve constructed using high-quality corporate bonds selected to yield cash flows that match the expected timing and amount of the benefit payments. The U.S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy. We evaluate these assumptions at least annually. For the non-U.S. plans, we set assumptions specific to each country. We have elected to measure defined benefit pension plan assets and liabilities as of October 31, which is the month end that is closest to our fiscal year end.

Derivative instruments. We use derivative financial instruments to manage exposure to foreign exchange risk and interest rate risk. We do not use derivative financial instruments for speculative or trading purposes.

Outstanding derivatives are recognized as assets or liabilities at their fair values based on Level 2 inputs, as defined in the fair value hierarchy. For derivative instruments designated as cash flow hedges, the changes in fair value are initially recognized in other comprehensive income (loss), net of tax in the period of change, and are subsequently reclassified and recognized in the same line item as the hedged item when either the hedged transactions affect earnings or it becomes probable that the hedged transactions will not occur.

We use foreign exchange forward contracts to manage exposure to foreign exchange risk. These forward contracts are not designated as hedging instruments, and the changes in fair value are recognized in other income (expense), net in the period of change. We did not have any outstanding foreign exchange forward contracts as of October 30, 2022 or

October 31, 2021. The gains and losses recorded in other income (expense), net for derivative instruments not designated as hedges were not material.

During fiscal year 2022, we entered into treasury rate lock contracts that mature in approximately one year to hedge variability of cash flows due to changes in the benchmark interest rate of anticipated future debt issuances. These treasury rate locks are designated and accounted for as cash flow hedging instruments. As of October 30, 2022, the total notional amount of these contracts was $1.3 billion, and the fair value of these contracts was $47 million, which was recorded as a derivative asset with the gains recorded net of tax as a component of accumulated other comprehensive loss on our consolidated balance sheet.

Property, plant and equipment. Property, plant and equipment are stated at cost less accumulated depreciation and amortization. Additions, improvements and major renewals are capitalized, and maintenance, repairs and minor renewals are expensed as incurred. Assets are held in construction in progress until placed in service, upon which date, we begin to depreciate these assets. When assets are retired or disposed of, the assets and related accumulated depreciation and amortization are removed from our property, plant and equipment balances and the resulting gain or loss is reflected in the consolidated statements of operations. Buildings and leasehold improvements are generally depreciated over 15 to 40 years, or over the lease period, whichever is shorter, and machinery and equipment are generally depreciated over 3 to 10 years. We use the straight-line method of depreciation for all property, plant and equipment.

Leases. We determine if an arrangement is a lease, or contains a lease, at the inception of the arrangement and evaluate whether the lease is an operating lease or a finance lease at the commencement date. We recognize right-of-use ("ROU") assets and lease liabilities for operating and finance leases with terms greater than 12 months, and account for the lease and non-lease components as a single component. ROU assets represent our right to use an asset for the lease term, while lease liabilities represent our obligation to make lease payments. Operating and finance lease ROU assets and liabilities are recognized based on the present value of lease payments over the lease term at the lease commencement date. We use the implicit interest rate or, if not readily determinable, our incremental borrowing rate as of the lease commencement date to determine the present value of lease payments. The incremental borrowing rate is based on our unsecured borrowing rate, adjusted for the effects of collateral. Operating and finance lease ROU assets are recognized net of any lease prepayments and incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Operating lease expense is recognized on a straight-line basis over the lease term. Finance lease expense is recognized based on the effective-interest method over the lease term.

Fair value measurement. Fair value is defined as the price that would be received upon sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. A three-level hierarchy is applied to prioritize the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

The three levels of the fair value hierarchy under the guidance for fair value measurements are described below:

Level 1 — Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Our Level 1 assets include cash equivalents, banker's acceptances, trading securities investments and investment funds. We measure trading securities investments and investment funds at quoted market prices as they are traded in active markets with sufficient volume and frequency of transactions.

Level 2 — Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. If the asset or liability has a specified contractual term, a Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 — Level 3 inputs are unobservable inputs for the asset or liability in which there is little, if any, market activity for the asset or liability at the measurement date. Level 3 assets and liabilities include investment in equity securities without readily determinable fair values, goodwill, intangible assets, and property, plant and equipment, which are measured at fair value using a discounted cash flow approach when they are impaired. Quantitative information for Level 3 assets and liabilities reviewed at each reporting period includes indicators of significant deterioration in the earnings performance, credit rating, asset quality, business prospects of the investee, and financial indicators of the investee's ability to continue as a going concern.

Business combinations. We account for business combinations under the acquisition method of accounting, which requires us to recognize separately from goodwill the assets acquired and the liabilities assumed at their acquisition date fair values. While we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recognized in our consolidated statements of operations. Accounting for business combinations requires our management to make significant estimates and assumptions, especially at the acquisition date including our estimates for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from the management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain acquired intangible assets under the income approach include growth in future expected cash flows from product sales, customer contracts and acquired technologies, revenue growth rate, customer ramp-up period, technology obsolescence rates, expected costs to develop in-process research and development ("IPR&D") into commercially viable products, estimated cash flows from the projects when completed and discount rates. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates or actual results.

Goodwill. Goodwill represents the excess of purchase price and related costs over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Goodwill is not amortized but is reviewed annually (or more frequently if impairment indicators arise) for impairment. To review for impairment we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit’s net book value. If the fair value of the reporting unit is greater than its net book value, there is no impairment. Otherwise, we calculate the implied fair value of goodwill by deducting the fair value of all tangible and intangible assets, excluding goodwill, of the reporting unit from the fair value of the reporting unit. The implied fair value of goodwill is compared to the carrying value of goodwill. If the implied fair value of goodwill is less than the carrying value of goodwill, an impairment loss is recognized equal to the difference. Determining the fair value of a reporting unit involves the use of significant estimates and assumptions.

Long-lived assets. Purchased finite-lived intangible assets are carried at cost less accumulated amortization. Amortization is recognized over the periods during which the intangible assets are expected to contribute to our cash flows. Purchased IPR&D projects are capitalized at fair value as an indefinite-lived intangible asset and assessed for impairment thereafter. Upon completion of each underlying project, IPR&D assets are reclassified as amortizable purchased intangible assets and amortized over their estimated useful lives. If an IPR&D project is abandoned, we recognize the carrying value of the related intangible asset in our consolidated statements of operations in the period it is abandoned. On a quarterly basis, we monitor factors and changes in circumstances that could indicate carrying amounts of long-lived assets, including purchased intangible assets and property, plant and equipment, may not be recoverable. Factors we consider important which could trigger an impairment review include: (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, and (iii) significant negative industry or economic trends. An impairment loss must be measured if the sum of the expected future cash flows (undiscounted and before interest) from the use and eventual disposition of the asset (or asset group) is less than the net book value of the asset (or asset group). The amount of the impairment loss will generally be measured as the difference between the net book value of the asset (or asset group) and the estimated fair value.

Warranty. We accrue for the estimated costs of product warranties at the time revenue is recognized. Product warranty costs are estimated based upon our historical experience and specific identification of the product requirements, which may fluctuate based on product mix. Additionally, we accrue for warranty costs associated with occasional or unanticipated product quality issues if a loss is probable and can be reasonably estimated.

Revenue recognition. We account for a contract with a customer when both parties have approved the contract and are committed to perform their respective obligations, each party’s rights can be identified, payment terms can be identified, the contract has commercial substance, and it is probable we will collect substantially all of the consideration we are entitled to. Revenue is recognized when, or as, performance obligations are satisfied by transferring control of a promised product or service to a customer.

Nature of Products and Services

Our products and services can be broadly categorized as sales of products and subscriptions and services. The following is a description of the principal activities from which we generate revenue.

Products. We recognize revenue from sales to direct customers and distributors when control transfers to the customer. Rebates and incentives offered to distributors, which are earned when sales to end customers are completed, are estimated at the point of revenue recognition. We have elected to exclude from the transaction price any taxes collected from a customer and to account for shipping and handling activities performed after a customer obtains control of the product as activities to fulfill the promise to transfer the product. From time to time, certain customers agree to pay us secure supply fees in exchange for prioritized fulfillment of product orders. Such fees are included in the transaction price of the product orders and are recognized as revenue in the period that control over the products is transferred to the customer.

Subscriptions and services. Our subscriptions and services revenue consists of sales and royalties from software arrangements, support services, professional services, transfer of IP, and non-recurring engineering (“NRE”) arrangements.

Revenue from software arrangements primarily consists of fees, which may be paid either at contract inception or in installments over the contract term, that provide customers with a right to use the software, access general support and maintenance, and utilize our professional services.

Our software licenses have standalone functionality from which customers derive benefit, and the customer obtains control of the software when it is delivered or made available for download. We believe that for the majority of software arrangements, customers derive significant benefit from the ongoing support we provide. The majority of our subscriptions and services arrangements permit our customers to unilaterally terminate or cancel these arrangements at any time at the customer's convenience, referred to as termination for convenience provisions, without substantive termination penalty and receive a pro-rata refund of any prepaid fees. Accordingly, we account for arrangements with these termination for convenience provisions as a series of daily contracts, resulting in ratable revenue recognition of software revenue over the contractual period.

Support services consist primarily of telephone support and the provision of unspecified updates and upgrades on a when-and-if-available basis. Support services represent stand-ready obligations for which revenue is recognized ratably over the term of the arrangement.

Professional services consist of implementation, consulting, customer education and customer training services. The obligation to provide professional services is generally satisfied over time, with the customer simultaneously receiving and consuming the benefits as we satisfy our performance obligations.

Rights to our IP are either sold or licensed to a customer. IP revenue recognition is dependent on the nature and terms of each agreement. We recognize IP revenue upon delivery of the IP if there are no substantive future obligations to perform under the arrangement. Sales-based or usage-based royalties from the license of IP are recognized at the later of the period the sales or usages occur or the satisfaction of the performance obligation to which some or all of the sales-based or usage-based royalties have been allocated.

There are two main categories of NRE contracts that we enter into with our customers: (a) NRE contracts in which we develop a custom chip and (b) NRE contracts in which we accelerate our development of a new chip upon the customer's request. The majority of our NRE contract revenues meet the over time criteria. As such, revenue is recognized over the development period with the measure of progress using the input method based on costs incurred to total cost as the services are provided. For NRE contracts that do not meet the over time criteria, revenue is recognized at a point in time when the NRE services are complete.

Material rights. Contracts with customers may also include material rights that are also performance obligations. These include the right to renew or receive products or services at a discounted price in the future. Revenue allocated to material rights is recognized when the customer exercises the right or the right expires.

Arrangements with Multiple Performance Obligations

Our contracts may contain more than one of the products and services listed above, each of which is separately accounted for as a distinct performance obligation.

Allocation of consideration. We allocate total contract consideration to each distinct performance obligation in a bundled arrangement on a relative standalone selling price basis. The standalone selling price reflects the price we would charge for a specific product or service if it were sold separately in similar circumstances and to similar customers.

Standalone selling price. When available, we use directly observable transactions to determine the standalone selling prices for performance obligations. When directly observable transactions are not available, our estimates of standalone selling price for each performance obligation require judgment that considers multiple factors, including, but not limited to, historical discounting trends for products and services and pricing practices through different sales channels, gross margin objectives, internal costs, competitor pricing strategies, technology lifecycles and market conditions.

We separately determine the standalone selling prices by product or service type. Additionally, we segment the standalone selling prices for products where the pricing strategies differ, and where there are differences in customers and circumstances that warrant segmentation.

We also estimate the standalone selling price of our material rights. We estimate the value of the customer’s option to purchase or receive additional products or services at a discounted price by estimating the incremental discount the customer would obtain when exercising the option and the likelihood that the option would be exercised.

Other Policies and Judgments

Contract modifications. We may modify contracts to offer customers additional products or services. Each of the additional products and services is generally considered distinct from those products or services transferred to the customer before the modification. We evaluate whether the contract price for the additional products and services reflects the standalone selling price as adjusted for facts and circumstances applicable to that contract. In these cases, we account for the additional products or services as a separate contract. In other cases where the pricing in the modification does not reflect the standalone selling price as adjusted for facts and circumstances applicable to that contract, we account for the additional products or services as part of the existing contract on a prospective basis, on a cumulative catch-up basis, or a combination of both based on the nature of the modification. In instances where the pricing in the modification offers the customer a credit for a prior arrangement, we adjust our variable consideration reserves for returns and other concessions.

Right of return. Certain contracts contain a right of return that allows the customer to cancel all or a portion of the product or service and receive a credit. We estimate returns based on historical returns data which is constrained to an amount for which a material revenue reversal is not probable. We do not recognize revenue for products or services that are expected to be returned.

Practical expedient elected. We do not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed. For contracts that were modified before the beginning of the earliest reporting period presented, we have not retrospectively restated the contract for those modifications. We have disclosed the aggregate effect of all modifications when identifying the satisfied and unsatisfied performance obligations for purposes of determining the transaction price and allocating the transaction price at transition.

Research and development. Research and development expense consists primarily of personnel costs for our engineers and third parties engaged in the design and development of our products, software and technologies, including salary, bonus and stock-based compensation expense, project material costs, services and depreciation. Such costs are charged to research and development expense as they are incurred.

Stock-based compensation expense. We recognize compensation expense for time-based restricted stock units ("RSUs") using the straight-line amortization method based on the fair value of RSUs on the date of grant. The fair value of RSUs is the closing market price of Broadcom common stock on the date of grant, reduced by the present value of dividends expected to be paid on Broadcom common stock prior to vesting. We recognize compensation expense for time-based stock options and employee stock purchase plan rights under the Broadcom Inc. Employee Stock Purchase Plan, as amended ("ESPP") based on the estimated grant-date fair value determined using the Black-Scholes valuation model with a straight-line amortization method.

Certain equity awards include both service and market conditions. The fair value of market-based awards is estimated on the date of grant using the Monte Carlo simulation technique. Compensation expense for market-based awards is amortized based upon a graded vesting method over the service period.

We estimate forfeitures expected to occur and recognize stock-based compensation expense for such awards expected to vest. Changes in the estimated forfeiture rates can have a significant effect on stock-based compensation expense since the effect of adjusting the rate is recognized in the period the forfeiture estimate is changed.

Shipping and handling costs. Our shipping and handling costs charged to customers are included in net revenue and the associated expense is included in cost of revenue for all periods presented.

Litigation and settlement cost. We are involved in legal actions and other matters arising in our recent business acquisitions and in the normal course of business. We recognize an estimated loss contingency when the outcome is probable prior to issuance of the consolidated financial statements and we are able to reasonably estimate the amount or range of any possible loss.

Income taxes. We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We recognize net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. If we determine that we are able to realize our deferred income tax assets in the future in excess of their net carrying values, we adjust the valuation allowance and reduce the provision for income taxes or increase the benefit from income taxes. Likewise, if we determine that we are not able to realize all or part of our net deferred tax assets, we increase the provision for income taxes or decrease the benefit from income taxes in the period such determination is made.

We account for uncertainty in income taxes in accordance with the applicable accounting guidance on income taxes. This guidance provides that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits.

Net income per share. Basic net income per share is computed by dividing net income attributable to common stock by the weighted-average number of shares of common stock outstanding during the period. Diluted net income per share is computed by dividing net income attributable to common stock by the weighted-average number of shares of common stock and potentially dilutive shares of common stock outstanding during the period. Diluted shares outstanding include the dilutive effect of unvested RSUs, in-the-money stock options, and ESPP rights (together referred to as "equity awards"), as well as convertible preferred stock. Potentially dilutive shares whose effect would have been antidilutive are excluded from the computation of diluted net income per share.

The dilutive effect of equity awards is calculated based on the average stock price for each fiscal period, using the treasury stock method. Under the treasury stock method, the amount the employee must pay for exercising stock options and purchasing shares under the ESPP and the amount of compensation cost for future service that we have not yet recognized are collectively assumed to be used to repurchase shares. The dilutive effect of convertible preferred stock is calculated using the if-converted method. The if-converted method assumes that these securities were converted at the beginning of the reporting period to the extent that the effect is dilutive.

Recently Adopted Accounting Guidance. In October 2021, the Financial Accounting Standards Board issued Accounting Standards Update ("ASU") 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. The new guidance requires contract assets and contract liabilities acquired in a business combination to be recognized and measured by the acquirer on the acquisition date in accordance with Accounting Standards Codification 606, *Revenue from Contracts with Customers*, as if it had originated the contracts. We early adopted this guidance at the beginning of fiscal year 2022 and it did not materially impact our consolidated financial statements.

3. Revenue from Contracts with Customers

Disaggregation

We have considered (1) information that is regularly reviewed by our Chief Executive Officer, who has been identified as the chief operating decision maker (the "CODM") as defined by the authoritative guidance on segment reporting, in evaluating financial performance and (2) disclosures presented outside of our financial statements in our earnings releases and used in investor presentations to disaggregate revenues. The principal category we use to disaggregate revenues is the nature of our products and subscriptions and services, as presented in our consolidated statements of operations. In addition, revenues by reportable segment are presented in Note 13. "Segment Information."

The following tables present revenue disaggregated by type of revenue and by region for the periods presented:

	Fiscal Year 2022			
	Americas	Asia Pacific	Europe, the Middle East and Africa	Total
	(In millions)			
Products	$ 2,371	$ 21,761	$ 2,145	$ 26,277
Subscriptions and services[(a)]	4,573	744	1,609	6,926
Total	$ 6,944	$ 22,505	$ 3,754	$ 33,203

	Fiscal Year 2021			
	Americas	Asia Pacific	Europe, the Middle East and Africa	Total
	(In millions)			
Products	$ 1,809	$ 17,258	$ 1,819	$ 20,886
Subscriptions and services[(a)]	4,290	720	1,554	6,564
Total	$ 6,099	$ 17,978	$ 3,373	$ 27,450

	Fiscal Year 2020			
	Americas	Asia Pacific	Europe, the Middle East and Africa	Total
	(In millions)			
Products	$ 1,775	$ 14,442	$ 1,218	$ 17,435
Subscriptions and services[(a)]	4,059	881	1,513	6,453
Total	$ 5,834	$ 15,323	$ 2,731	$ 23,888

(a) Subscriptions and services predominantly includes software licenses with termination for convenience clauses.

Although we recognize revenue for the majority of our products when title and control transfer in Penang, Malaysia, we disclose net revenue by region based primarily on the geographic shipment location or delivery location specified by our distributors, original equipment manufacturer (“OEM”) customers, contract manufacturers, channel partners, or software customers.

Contract Balances

Contract assets and contract liabilities balances were as follows:

	October 30, 2022	October 31, 2021
	(In millions)	
Contract Assets	$ 128	$ 126
Contract Liabilities	$ 3,341	$ 3,185

Changes in our contract assets and contract liabilities primarily result from the timing difference between our performance and the customer’s payment. We fulfill our obligations under a contract with a customer by transferring products and services in exchange for consideration from the customer. We recognize a contract asset when we transfer products or services to a customer and the right to consideration is conditional on something other than the passage of time. Accounts receivable are recorded when the customer has been billed or the right to consideration is unconditional. We recognize contract liabilities when we have received consideration or an amount of consideration is due from the customer and we have a future obligation to transfer products or services. Contract liabilities include amounts billed or collected and advanced payments on contracts or arrangements which may include termination for convenience provisions. The amount of revenue recognized during fiscal year 2022 that was included in the contract liabilities balance as of October 31, 2021 was $2,615 million. The amount of revenue recognized during fiscal year 2021 that was included in the contract liabilities balance as of November 1, 2020 was $2,617 million.

Remaining Performance Obligations

Revenue allocated to remaining performance obligations represents the transaction price allocated to unsatisfied or partially unsatisfied performance obligations. Remaining performance obligations include unearned revenue and amounts that will be invoiced and recognized as revenue in future periods, but do not include contracts for software, subscriptions or services where the customer is not committed. The customer is not considered committed when termination for convenience without payment of a substantive penalty exists, either contractually or through customary business practice. The majority of our customer software contracts include termination for convenience clauses without a substantive penalty and are not considered committed. Additionally, as a practical expedient, we have not included contracts that have an original duration of one year or less, nor have we included contracts with sales-based or usage-based royalties promised in exchange for a license of IP.

Certain multi-year customer contracts in our semiconductor solutions segment contain firmly committed amounts and the remaining performance obligations under these contracts as of October 30, 2022 were approximately $23.6 billion. We expect approximately 28% of this amount to be recognized as revenue over the next 12 months. Although the majority of our software contracts are not deemed to be committed, our customers generally do not exercise their termination for convenience rights. In addition, the majority of our contracts for products, subscriptions and services have a duration of one year or less. Accordingly, our remaining performance obligations disclosed above are not indicative of revenue for future periods.

4. Acquisitions

Pending Acquisition of VMware, Inc.

On May 26, 2022, we entered into an Agreement and Plan of Merger (the “VMware Merger Agreement”) to acquire all of the outstanding shares of VMware, Inc. (“VMware”) in a cash-and-stock transaction (the “VMware Merger”) that values VMware at approximately $61 billion based on the closing price of Broadcom common stock on May 25, 2022. We will also assume VMware’s closing date outstanding debt, net of expected cash.

Under the terms of the VMware Merger Agreement, each share of VMware common stock issued and outstanding immediately prior to the effective time of the VMware Merger will be indirectly converted into the right to receive, at the election of the holder of such share of VMware common stock, either $142.50 in cash, without interest, or 0.2520 shares of Broadcom common stock. The stockholder election will be subject to proration, such that the total number of shares of VMware common stock entitled to receive cash and the total number of shares of VMware common stock entitled to receive Broadcom common stock, will, in each case, be equal to 50% of the aggregate number of shares of VMware common stock issued and outstanding immediately prior to the effective time of the VMware Merger.

We will assume all outstanding VMware RSU awards and performance stock unit awards held by continuing employees. The assumed awards will be converted into RSU awards for shares of Broadcom common stock. All outstanding in-the-money VMware stock options and RSU awards held by non-employee directors will be accelerated and converted into the right to receive cash and shares of Broadcom common stock, in equal parts.

Effective upon the effective time of the VMware Merger, one member of the VMware Board of Directors, to be mutually agreed by us and VMware, will be added to our Board of Directors.

In connection with the execution of the VMware Merger Agreement, we entered into a commitment letter on May 26, 2022, with certain financial institutions that committed to provide, subject to the terms and conditions of the commitment letter, a senior unsecured bridge facility in an aggregate principal amount of $32 billion.

The VMware Merger, which is expected to be completed in our fiscal year ending October 29, 2023 (“fiscal year 2023”), is subject to satisfaction or waiver of customary closing conditions, including the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvement Act of 1976 and clearance under the antitrust laws of the European Union and certain other jurisdictions. On October 3, 2022, we registered approximately 59 million shares of our common stock. On November 4, 2022, VMware stockholders adopted the VMware Merger Agreement. We and VMware each have termination rights under the VMware Merger Agreement and, under specified circumstances, upon termination of the agreement, we and VMware would be required to pay the other a termination fee of $1.5 billion.

Acquisition of the Symantec Corporation Enterprise Security Business

On November 4, 2019 (the "Symantec Acquisition Date"), we completed the purchase of the Symantec Business, which was an established leader in cyber security, for $10.7 billion in cash. We acquired the Symantec Business to expand our footprint of mission critical infrastructure software with our existing customer base. The Symantec Business includes a deep and broad mix of products, services and solutions, unifying cloud and on-premises security to provide advanced threat protection and information protection across endpoints, network, email and cloud applications. We financed this acquisition with borrowings.

The following table presents our allocation of the total purchase price:

	Fair Value
	(In millions)
Current assets	$ 273
Goodwill	6,638
Intangible assets	5,411
Other long-term assets	92
Total assets acquired	12,414
Current liabilities	(1,127)
Other long-term liabilities	(587)
Total liabilities assumed	(1,714)
Fair value of net assets acquired	$ 10,700

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the Symantec Business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved resulting from the acquisition of the Symantec Business. Substantially all goodwill is deductible for tax purposes.

Current assets and current liabilities included amounts held-for-sale related to the acquired Symantec Cyber Security Services business, which was not aligned with our acquisition-date strategic objectives and was sold on April 30, 2020. We do not have any material continuing involvement with this business and have presented its results in discontinued operations.

Our results of continuing operations for fiscal year 2020 included $1,610 million of net revenue attributable to the Symantec Business. It was impracticable to determine the effect on net income attributable to the Symantec Business as we had integrated the Symantec Business into our ongoing operations during the year. The results of operations of the Symantec Business were included in our infrastructure software segment. Transaction costs related to the acquisition of the Symantec Business of $110 million were included in selling, general and administrative expense for fiscal year 2020.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 2,900	5
Customer contracts and related relationships	2,410	5
Trade name	90	6
Order backlog	11	3
Total identified finite-lived intangible assets	$ 5,411	

Developed technology relates to products used for cyber security solutions, including data loss prevention, endpoint protection, and web, email and cloud security solutions. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of the Symantec Business. Customer contracts and related relationships were valued using the with-and-without-method under the income approach. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. The economic useful life was determined by evaluating many factors, including the useful life of other intangible assets, the length of time remaining on the acquired contracts and the historical customer turnover rates.

Trade name relates to the "Symantec" trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

Order backlog represents business under existing contractual obligations. The fair value of backlog was determined using the multi-period excess earnings method under the income approach based on expected operating cash flows from future contractual revenue. The economic useful life was determined based on the expected life of the backlog and the cash flows over the forecast period.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the Symantec Acquisition Date.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for the period presented, as if we had completed the acquisition of the Symantec Business as of the beginning of our fiscal year ended November 3, 2019 ("fiscal year 2019"). The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to interest expense for the additional indebtedness incurred to complete the acquisition, restructuring charges related to the acquisition and transaction costs. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2019 or of the results of our future operations of the combined business.

	Fiscal Year 2020
	(In millions)
Pro forma net revenue	$ 23,264
Pro forma net income attributable to common stock	$ 2,368

Other Acquisitions

During fiscal year 2022, we completed four acquisitions qualifying as business combinations for total consideration of $245 million. For these acquisitions, $164 million was allocated to goodwill and $110 million was allocated to intangible assets, with additional amounts allocated to tangible assets and liabilities, primarily within our infrastructure software segment.

During fiscal year 2020, we completed three other acquisitions qualifying as business combinations for total consideration of $201 million. For these acquisitions, $109 million was allocated to goodwill and $46 million was allocated to intangible assets, with additional amounts allocated to tangible assets and liabilities, primarily within our infrastructure software segment.

5. Supplemental Financial Information

Cash Equivalents

Cash equivalents included $3,915 million and $4,668 million of time deposits and $2,365 million and $1,607 million of money-market funds as of October 30, 2022 and October 31, 2021, respectively. For time deposits, carrying value approximates fair value due to the short-term nature of the instruments. The fair value of money-market funds, which was consistent with their carrying value, was determined using unadjusted prices in active, accessible markets for identical assets, and as such, they were classified as Level 1 assets in the fair value hierarchy.

Accounts Receivable Factoring

We sell certain of our trade accounts receivable on a non-recourse basis to third-party financial institutions pursuant to factoring arrangements. We account for these transactions as sales of receivables and present cash proceeds as cash provided by operating activities in the consolidated statements of cash flows. Total trade accounts receivable sold under the factoring arrangements were $3,700 million, $4,027 million and $3,723 million during fiscal years 2022, 2021 and 2020, respectively. Factoring fees for the sales of receivables were recorded in other income (expense), net and were not material for any of the periods presented.

Inventory

	October 30, 2022	October 31, 2021
	(In millions)	
Finished goods	$ 780	$ 423
Work-in-process	966	680
Raw materials	179	194
Total inventory	$ 1,925	$ 1,297

Property, Plant and Equipment, Net

	October 30, 2022	October 31, 2021
	(In millions)	
Land	$ 195	$ 195
Construction in progress	63	38
Buildings and leasehold improvements	1,156	1,150
Machinery and equipment	4,413	4,161
Total property, plant and equipment	5,827	5,544
Accumulated depreciation and amortization	(3,604)	(3,196)
Total property, plant and equipment, net	$ 2,223	$ 2,348

Depreciation expense was $529 million, $539 million and $570 million for fiscal years 2022, 2021, and 2020, respectively.

Other Current Assets

	October 30, 2022	October 31, 2021
	(In millions)	
Prepaid expenses	$ 864	$ 539
Other	341	516
Total other current assets	$ 1,205	$ 1,055

Other Current Liabilities

	October 30, 2022	October 31, 2021
	(In millions)	
Contract liabilities	$ 2,931	$ 2,619
Tax liabilities	680	541
Interest payable	393	282
Other	408	397
Total other current liabilities	$ 4,412	$ 3,839

Table of Contents

Other Long-Term Liabilities

	October 30, 2022	October 31, 2021
	(In millions)	
Unrecognized tax benefits, interest and penalties	$ 3,229	$ 3,407
Contract liabilities	410	566
Other	774	887
Total other long-term liabilities	$ 4,413	$ 4,860

Other Income (Expense), Net

	Fiscal Year		
	2022	2021	2020
		(In millions)	
Gain (loss) on investments	$ (169)	$ 99	$ 31
Other income	30	26	56
Interest income	100	16	53
Other expense	(15)	(10)	(50)
Gain from lapse of indemnification	—	—	116
Other income (expense), net	$ (54)	$ 131	$ 206

Other income includes foreign exchange gains, dividends, and other miscellaneous items.

6. Leases

At the beginning of fiscal year 2020, we adopted ASU 2016-02, *Leases* (“Topic 842”) using the optional adoption method, whereby no adjustment to the financial statements of comparative periods was required. We have operating and finance leases for our facilities, data centers and certain equipment. Operating lease expense was $98 million, $102 million and $106 million for fiscal years 2022, 2021 and 2020, respectively. Finance lease expense was $18 million, $16 million and $14 million for fiscal years 2022, 2021 and 2020 respectively.

Other information related to leases was as follows:

	Fiscal Year		
	2022	2021	2020
	(In millions)		
Cash paid for operating leases included in operating cash flows	$ 103	$ 140	$ 125
ROU assets obtained in exchange for operating lease liabilities	$ 16	$ 92	$ 682
ROU assets obtained in exchange for finance lease liabilities	$ 1	$ 15	$ 74

	October 30, 2022	October 31, 2021
Weighted-average remaining lease term – operating leases (In years)	10	10
Weighted-average remaining lease term – finance leases (In years)	2	3
Weighted-average discount rate – operating leases	3.60 %	3.78 %
Weighted-average discount rate – finance leases	3.05 %	3.11 %

Supplemental balance sheet information related to leases was as follows:

	Classification on the Consolidated Balance Sheets	October 30, 2022	October 31, 2021
		(In millions)	
ROU assets - operating leases	Other long-term assets	$ 517	$ 588
ROU assets - finance leases	Property, plant and equipment, net	$ 40	$ 55
Short-term lease liabilities - operating leases	Other current liabilities	$ 74	$ 83
Long-term lease liabilities - operating leases	Other long-term liabilities	$ 389	$ 460
Short-term lease liabilities - finance leases	Current portion of long-term debt	$ 37	$ 26
Long-term lease liabilities - finance leases	Long-term debt	$ 22	$ 39

Future minimum lease payments under non-cancelable leases as of October 30, 2022 were as follows:

	October 30, 2022	
	Operating Leases	Finance Leases
	(In millions)	
2023	$ 89	$ 38
2024	69	18
2025	58	2
2026	45	2
2027	40	—
Thereafter	267	—
Total undiscounted liabilities	568	60
Less: interest	(105)	(1)
Present value of lease liabilities	$ 463	$ 59

7. Goodwill and Intangible Assets

Goodwill

	Semiconductor Solutions	Infrastructure Software	Total
		(In millions)	
Balance as of November 1, 2020	$ 25,959	$ 17,488	$ 43,447
Acquisition	—	10	10
Sale of business	—	(7)	(7)
Balance as of October 31, 2021	25,959	17,491	43,450
Acquisitions	8	156	164
Balance as of October 30, 2022	$ 25,967	$ 17,647	$ 43,614

During the fourth quarter of fiscal years 2022, 2021 and 2020, we completed our annual impairment assessments and concluded that goodwill was not impaired in any of these years.

Intangible Assets

	Gross Carrying Amount	Accumulated Amortization	Net Book Value
		(In millions)	
As of October 30, 2022:			
Purchased technology	$ 19,450	$ (15,422)	$ 4,028
Customer contracts and related relationships	7,066	(4,535)	2,531
Order backlog	484	(382)	102
Trade names	700	(372)	328
Other	174	(81)	93
Intangible assets subject to amortization	27,874	(20,792)	7,082
IPR&D	29	—	29
Total	$ 27,903	$ (20,792)	$ 7,111
As of October 31, 2021:			
Purchased technology	$ 23,932	$ (17,148)	$ 6,784
Customer contracts and related relationships	8,356	(4,533)	3,823
Order backlog	2,579	(2,352)	227
Trade names	787	(386)	401
Other	239	(127)	112
Intangible assets subject to amortization	35,893	(24,546)	11,347
IPR&D	27	—	27
Total	$ 35,920	$ (24,546)	$ 11,374

Based on the amount of intangible assets subject to amortization at October 30, 2022, the expected amortization expense for each of the next five fiscal years and thereafter was as follows:

Fiscal Year:	Expected Amortization Expense
	(In millions)
2023	$ 3,255
2024	2,388
2025	681
2026	344
2027	216
Thereafter	198
Total	$ 7,082

The weighted-average amortization periods remaining by intangible asset category were as follows:

Amortizable intangible assets:	October 30, 2022	October 31, 2021
	(In years)	
Purchased technology	3	4
Customer contracts and related relationships	2	3
Order backlog	1	2
Trade names	8	8
Other	8	9

8. Net Income Per Share

	Fiscal Year		
	2022	2021	2020
	(In millions, except per share data)		
Numerator:			
Income from continuing operations	$ 11,495	$ 6,736	$ 2,961
Dividends on preferred stock	(272)	(299)	(297)
Income from continuing operations attributable to common stock	11,223	6,437	2,664
Loss from discontinued operations, net of income taxes, attributable to common stock	—	—	(1)
Net income attributable to common stock	$ 11,223	$ 6,437	$ 2,663
Denominator:			
Weighted-average shares outstanding - basic	409	410	402
Dilutive effect of equity awards	14	19	19
Weighted-average shares outstanding - diluted	423	429	421
Net income per share attributable to common stock:			
Basic	$ 27.44	$ 15.70	$ 6.62
Diluted	$ 26.53	$ 15.00	$ 6.33

For fiscal years 2022, 2021 and 2020, diluted net income per share excluded the potentially dilutive effect of 10 million, 12 million and 12 million shares of common stock, respectively, issuable upon the conversion of Mandatory Convertible Preferred Stock, as defined in Note 11. "Stockholders' Equity," as their effect was antidilutive.

9. Retirement Plans

Defined Benefit Pension Plans

The U.S. defined benefit pension plans primarily consist of a qualified pension plan. Benefits of the qualified pension plan are provided under an adjusted career-average-pay program, a cash-balance program or a dollar-per-month program. Benefit accruals under this plan were frozen in 2009. Participants in the adjusted career-average-pay program no longer earn service accruals. Participants in the cash-balance program no longer earn service accruals, but continue to earn 4% interest per year on their cash-balance accounts. There are no active participants under the dollar-per-month program. We also have a non-qualified supplemental pension plan in the United States that principally provides benefits based on compensation in excess of amounts that can be considered under the qualified pension plan.

We also have defined benefit pension plans for certain employees in Austria, France, Germany, India, Israel, Italy, Japan and Taiwan. Eligibility is generally determined based on the terms of our plans and local statutory requirements.

Net Periodic Benefit Cost

	Fiscal Year		
	2022	2021	2020
	(In millions)		
Service cost	$ 8	$ 11	$ 12
Interest cost	39	39	45
Expected return on plan assets	(39)	(40)	(46)
Other	1	1	(3)
Net periodic benefit cost	$ 9	$ 11	$ 8
Net actuarial (gain) loss	$ (17)	$ 8	$ (28)

The components of net periodic benefit cost other than the service cost are included in other income (expense), net. Service cost is recognized in operating expenses.

Table of Contents

Benefit Obligations and Plan Assets

	October 30, 2022	October 31, 2021
	(In millions)	
Change in plan assets:		
Fair value of plan assets — beginning of period	$ 1,521	$ 1,593
Actual return on plan assets	(279)	20
Employer contributions	10	9
Plan participants’ contributions	1	—
Payments from plan assets	(95)	(102)
Foreign currency impact	2	1
Fair value of plan assets — end of period	1,160	1,521
Change in benefit obligations:		
Benefit obligations — beginning of period	1,526	1,588
Service cost	8	11
Interest cost	39	39
Actuarial gain [a]	(336)	(11)
Plan participants' contributions	1	—
Benefit payments	(95)	(102)
Curtailments	—	(1)
Foreign currency impact	—	2
Benefit obligations — end of period	1,143	1,526
Overfunded (underfunded) status of benefit obligations [b]	$ 17	$ (5)
Actuarial losses and prior service costs recognized in accumulated other comprehensive loss, net of taxes	$ (82)	$ (100)

(a) The actuarial gain in fiscal year 2022 was primarily due to an increase in discount rates experienced by the majority of our plans.

(b) Substantially all amounts recognized on the consolidated balance sheets were recorded in other long-term assets and other long-term liabilities for all periods presented.

Plans with benefit obligations in excess of plan assets:

	October 30, 2022	October 31, 2021
	(In millions)	
Projected benefit obligations	$ 71	$ 83
Accumulated benefit obligations	$ 55	$ 65
Fair value of plan assets	$ 12	$ 13

Plans with benefit obligations less than plan assets:

	October 30, 2022	October 31, 2021
	(In millions)	
Projected benefit obligations	$ 1,072	$ 1,443
Accumulated benefit obligations	$ 1,070	$ 1,442
Fair value of plan assets	$ 1,148	$ 1,508

The fair value of pension plan assets as of October 30, 2022 and October 31, 2021 included $184 million and $174 million, respectively, of assets for our non-U.S. pension plans.

The projected benefit obligations as of October 30, 2022 and October 31, 2021 included $185 million and $217 million, respectively, of obligations related to our non-U.S. pension plans. The accumulated benefit obligations as of October 30, 2022 and October 31, 2021 included $168 million and $199 million, respectively, of obligations related to our non-U.S. pension plans.

Expected Future Benefit Payments

Fiscal Years:	**Expected Benefit Payments**
	(In millions)
2023	$ 95
2024	$ 95
2025	$ 94
2026	$ 94
2027	$ 93
2028-2032	$ 444

Investment Policy

Plan assets of the U.S. qualified pension plan, which represent substantially all of the plan assets, are generally invested in funds held by third-party fund managers. Our benefit plan investment committee has set the investment strategy to fully match the liability. We direct the overall portfolio allocation and use a third-party investment consultant that has the discretion to structure portfolios and select the investment managers within those allocation parameters. Multiple investment managers are utilized, including both active and passive management approaches. The plan assets are invested using the liability-driven investment strategy intended to minimize market and interest rate risks, and those assets are periodically rebalanced toward asset allocation targets.

The target asset allocation for the U.S. qualified pension plan reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plan. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. For both fiscal years 2022 and 2021, 100% of the U.S. qualified pension plan assets were allocated to fixed income, in line with the target allocation. The fixed income allocation is primarily directed toward long-term core bond investments, with smaller allocations to Treasury Inflation-Protected Securities and high-yield bonds.

Table of Contents

Fair Value Measurement of Plan Assets

	October 30, 2022		
	Fair Value Measurements at Reporting Date Using		
	Level 1	Level 2	Total
	(In millions)		
Cash equivalents	$ 19 [(a)]	$ —	$ 19
Equity securities:			
Non-U.S. equity securities	46 [(b)]	—	46
Fixed-income securities:			
U.S. treasuries	—	147 [(c)]	147
Corporate bonds	—	901 [(c)]	901
Municipal bonds	—	20 [(c)]	20
Government bonds	—	25 [(c)]	25
Asset-backed securities	—	2 [(c)]	2
Total plan assets	$ 65	$ 1,095	$ 1,160

	October 31, 2021		
	Fair Value Measurements at Reporting Date Using		
	Level 1	Level 2	Total
	(In millions)		
Cash equivalents	$ 24 [(a)]	$ —	$ 24
Equity securities:			
Non-U.S. equity securities	28 [(b)]	—	28
Fixed-income securities:			
U.S. treasuries	—	186 [(c)]	186
Corporate bonds	—	1,222 [(c)]	1,222
Municipal bonds	—	24 [(c)]	24
Government bonds	—	34 [(c)]	34
Asset-backed securities	—	3 [(c)]	3
Total plan assets	$ 52	$ 1,469	$ 1,521

(a) Cash equivalents primarily included short-term investment funds which consisted of short-term money market instruments that were valued based on quoted prices in active markets.

(b) These equity securities were valued based on quoted prices in active markets.

(c) These amounts consisted of investments that were traded less frequently than Level 1 securities and were valued using inputs that included quoted prices for similar assets in active markets and inputs other than quoted prices that were observable for the assets, such as interest rates, yield curves, prepayment speeds, collateral performance, broker/dealer quotes and indices that were observable at commonly quoted intervals.

Assumptions

The assumptions used to determine the benefit obligations and net periodic benefit cost for our defined benefit pension plans are presented in the table below. The expected long-term return on assets shown in the table below represents an estimate of long-term returns on investment portfolios primarily consisting of combinations of debt, equity and other investments, depending on the plan. The long-term rates of return are then weighted based on the asset classes in which the pension funds are invested. Discount rates reflect the current rate at which defined benefit pension obligations could be settled based on the measurement dates of the plans, which is October 31, the month end closest to our fiscal year end. The range of assumptions reflects the different economic environments within various countries.

	Assumptions for Benefit Obligations as of		Assumptions for Net Periodic Benefit Cost Fiscal Year		
	October 30, 2022	October 31, 2021	2022	2021	2020
Discount rate	1.25%-7.25%	0.75%-6.50%	0.75%-6.50%	0.61%-6.54%	0.47%-7.00%
Average increase in compensation levels	2.00%-10.00%	2.00%-10.00%	2.00%-10.00%	2.00%-10.00%	2.00%-10.00%
Expected long-term return on assets	N/A	N/A	1.50%-7.25%	1.00%-8.00%	1.50%-7.80%

Defined Contribution Plans

Our eligible U.S. employees participate in a company-sponsored 401(k) plan. Under the plan, we match employee contributions dollar for dollar up to 6% of their eligible earnings. All matching contributions vest immediately. During fiscal years 2022, 2021 and 2020, we made contributions of $96 million, $94 million and $99 million, respectively, to the 401(k) plan.

In addition, other eligible employees outside of the U.S. receive retirement benefits under various defined contribution retirement plans.

Table of Contents

10. Borrowings

	Effective Interest Rate	October 30, 2022	October 31, 2021
	(In millions, except percentages)		
April 2022 Senior Notes - fixed rate			
4.000% notes due April 2029	4.17 %	$ 750	$ —
4.150% notes due April 2032	4.30 %	1,200	—
4.926% notes due May 2037	5.33 %	2,500	—
		4,450	—
September 2021 Senior Notes - fixed rate			
3.137% notes due November 2035	4.23 %	3,250	3,250
3.187% notes due November 2036	4.79 %	2,750	2,750
		6,000	6,000
March 2021 Senior Notes - fixed rate			
3.419% notes due April 2033	4.66 %	2,250	2,250
3.469% notes due April 2034	4.63 %	3,250	3,250
		5,500	5,500
January 2021 Senior Notes - fixed rate			
1.950% notes due February 2028	2.10 %	750	750
2.450% notes due February 2031	2.56 %	2,750	2,750
2.600% notes due February 2033	2.70 %	1,750	1,750
3.500% notes due February 2041	3.60 %	3,000	3,000
3.750% notes due February 2051	3.84 %	1,750	1,750
		10,000	10,000
June 2020 Senior Notes - fixed rate			
3.459% notes due September 2026	4.19 %	752	752
4.110% notes due September 2028	5.02 %	1,118	1,965
		1,870	2,717
May 2020 Senior Notes - fixed rate			
2.250% notes due November 2023	2.40 %	105	105
3.150% notes due November 2025	3.29 %	900	900
4.150% notes due November 2030	4.27 %	1,856	2,679
4.300% notes due November 2032	4.39 %	2,000	2,000
		4,861	5,684
April 2020 Senior Notes - fixed rate			
4.700% notes due April 2025	4.88 %	—	1,020
5.000% notes due April 2030	5.18 %	606	1,086
		606	2,106
April 2019 Senior Notes - fixed rate			
3.625% notes due October 2024	3.98 %	622	622
4.250% notes due April 2026	4.54 %	—	944
4.750% notes due April 2029	4.95 %	1,655	1,958
		2,277	3,524
2017 Senior Notes - fixed rate			
3.000% notes due January 2022	3.21 %	—	255
2.650% notes due January 2023	2.78 %	260	260
3.625% notes due January 2024	3.74 %	829	829

	Effective Interest Rate	October 30, 2022	October 31, 2021
	(In millions, except percentages)		
3.125% notes due January 2025	3.23 %	495	495
3.875% notes due January 2027	4.02 %	2,922	2,922
3.500% notes due January 2028	3.60 %	777	777
		5,283	5,538
Assumed CA Senior Notes - fixed rate			
4.500% notes due August 2023	4.10 %	143	143
4.700% notes due March 2027	5.15 %	215	265
		358	408
Other senior notes - fixed rate			
2.500% notes due August 2022	2.59 %	—	9
3.500% notes due August 2024	3.55 %	7	7
4.500% notes due August 2034	4.55 %	6	6
		13	22
Total principal amount outstanding		$ 41,218	$ 41,499
Current portion of principal amount outstanding		$ 403	$ 264
Short-term finance lease liabilities		37	26
Total current portion of long-term debt		$ 440	$ 290
Non-current portion of principal amount outstanding		$ 40,815	$ 41,235
Long-term finance lease liabilities		22	39
Unamortized discount and issuance costs		(1,762)	(1,834)
Total long-term debt		$ 39,075	$ 39,440

The senior notes are recorded net of discount and issuance costs, which are amortized to interest expense over the respective terms of such senior notes.

April 2022 Senior Notes

In April 2022, we issued $750 million of 4.000% senior unsecured notes due April 2029 and $1,200 million of 4.150% senior unsecured notes due April 2032. Using the net proceeds, we redeemed the outstanding balance of $1,020 million of our 4.700% notes due 2025 and $944 million of our 4.250% notes due 2026. As a result of these redemptions, we incurred premiums of $85 million and wrote off $15 million of unamortized discount and issuance costs, both of which were included in interest expense.

In April 2022, we issued $2,500 million of 4.926% senior unsecured notes due May 2037 in exchange for $2,502 million of certain of our outstanding notes maturing between 2027 and 2030. As a result of this exchange, we paid premiums of $47 million, which were included in unamortized discount and issuance costs. The 4.926% notes due 2037, the 4.000% notes due 2029 and the 4.150% notes due 2032 are collectively referred as the "April 2022 Senior Notes."

We may redeem or purchase, in whole or in part, any of the April 2022 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indentures governing the April 2022 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes, plus accrued and unpaid interest.

September 2021 Senior Notes

In September 2021, we completed our private offers to exchange $6.0 billion of certain of our outstanding notes maturing between 2025 and 2030 for $3,250 million of 3.137% senior unsecured notes due November 2035 and $2,750 million of 3.187% senior unsecured notes due November 2036 (collectively, the “September 2021 Senior Notes”). As a result of this exchange, we paid premiums of $762 million, which were included in unamortized discount and issuance costs. We may redeem or purchase, in whole or in part, any of the September 2021 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the September 2021 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes, plus accrued and unpaid interest.

March 2021 Senior Notes

In March 2021, we completed our private offers to exchange $5.5 billion of certain of our outstanding notes maturing between 2024 and 2027 (the "March 2021 Exchange Offer") for $2,250 million of 3.419% senior unsecured notes due April 2033 and $3,250 million of 3.469% senior unsecured notes due April 2034 (collectively, the "March 2021 Senior Notes"). As a result of this exchange, we paid premiums of $581 million, which were included in unamortized discount and issuance costs. We may redeem or purchase, in whole or in part, any of the March 2021 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the March 2021 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes, plus accrued and unpaid interest.

In connection with the March 2021 Exchange Offer, Broadcom Corporation ("BRCM") and Broadcom Technologies Inc. ("BTI") were automatically and unconditionally released from their guarantees in accordance with the respective indentures governing the January 2021 Senior Notes, June 2020 Senior Notes, May 2020 Senior Notes, April 2020 Senior Notes, and April 2019 Senior Notes, as defined below respectively.

January 2021 Senior Notes

In January 2021, we issued $10 billion of senior unsecured notes (the "January 2021 Senior Notes"). We may redeem or purchase, in whole or in part, any of the January 2021 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the January 2021 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes, plus accrued and unpaid interest.

Using the net proceeds from the January 2021 Senior Notes, we repaid the outstanding balance of $5,888 million of our unsecured term A-3 facility and unsecured term A-5 facility under the credit agreement entered into on November 4, 2019 (the "November 2019 Credit Agreement"), repurchased $3,830 million of certain of our outstanding notes maturing between 2021 and 2023 through a cash tender offer and redemption, and repaid $282 million of our 2.200% notes upon maturity in January 2021. As a result of these repayments and repurchases, we incurred premiums of $151 million and wrote off $47 million of unamortized discount and issuance costs, both of which were included in interest expense.

January 2021 Credit Agreement

In January 2021, we entered into a credit agreement (the "January 2021 Credit Agreement"), which provides for a five-year $7.5 billion unsecured revolving credit facility (the "Revolving Facility"), of which $500 million is available for the issuance of multi-currency letters of credit. The issuance of letters of credit and certain other instruments would reduce the aggregate amount otherwise available under the Revolving Facility for revolving loans. Subject to the terms of the January 2021 Credit Agreement, we are permitted to borrow, repay and reborrow revolving loans at any time prior to the earlier of (a) January 19, 2026 and (b) the date of termination in whole of the revolving lenders' commitments under the January 2021 Credit Agreement. In connection with the January 2021 Credit Agreement, we terminated the credit agreement entered into on May 7, 2019 (the "May 2019 Credit Agreement"), which provided for a five-year $5 billion unsecured revolving credit facility, and the November 2019 Credit Agreement. We had no borrowings outstanding under the Revolving Facility at either October 30, 2022 or October 31, 2021.

June 2020 Senior Notes

In June 2020, we completed our private offers to exchange $3,742 million of certain series of our outstanding notes maturing between 2021 and 2024 for $1,695 million of senior notes due 2026 and $2,222 million of senior notes due 2028 (collectively, the "June 2020 Senior Notes"). As a result of this exchange, we paid premiums of $177 million, which were included in unamortized discount and issuance costs. We may redeem or purchase, in whole or in part, any of the June 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the June 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest.

May 2020 Senior Notes

In May 2020, we issued $8 billion of senior unsecured notes (the "May 2020 Senior Notes"). We may redeem or purchase, in whole or in part, any of the May 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the May 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest.

The net proceeds from this issuance, together with the remaining net proceeds from the issuance of the April 2020 Senior Notes, as defined below, were used to repay an aggregate of $5,424 million of term loans outstanding under the November 2019 Credit Agreement, consisting of repayments of $2,712 million of each of our unsecured term A-3 and A-5 facilities and $3 billion of borrowings outstanding under the unsecured revolving credit facility provided by the May 2019 Credit Agreement. During fiscal year 2020, we wrote off $60 million of unamortized discount and issuance costs as a result of repayments of term loans outstanding under the November 2019 Credit Agreement, which were included in interest expense.

April 2020 Senior Notes

In April 2020, we issued $4.5 billion of senior unsecured notes (the "April 2020 Senior Notes"). We may redeem or purchase, in whole or in part, any of the April 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the April 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest.

Pursuant to a cash tender offer that we completed in April 2020, we repurchased certain of outstanding notes maturing between 2021 and 2022 with the net proceeds from the April 2020 Senior Notes. As a result of these repurchases, we incurred premiums of $78 million and wrote off $15 million of unamortized discount and issuance costs, both of which were included in interest expense.

April 2019 Senior Notes

In April 2019, we issued $11 billion of senior unsecured notes (the "April 2019 Senior Notes"). We may redeem or purchase, in whole or in part, any of the April 2019 Senior Notes prior to their respective maturities, subject to a make-whole premium determined in accordance with the indenture governing the April 2019 Senior Notes, plus accrued and unpaid interest.

Registered Exchange Offer

In connection with the issuance of the June 2020 Senior Notes, the May 2020 Senior Notes, the April 2020 Senior Notes (collectively, the "2020 Senior Notes") and the April 2019 Senior Notes, we entered into registration rights agreements, pursuant to which we were obligated to use commercially reasonable efforts to file with the Securities and Exchange Commission (the "SEC"), and cause to be declared effective, a registration statement with respect to an offer to exchange (the "Registered Exchange Offer") each series of the 2020 Senior Notes and the April 2019 Senior Notes for notes that are registered with the SEC (the "Registered Notes"), with substantially identical terms. We completed the Registered Exchange Offer on August 10, 2020. Substantially all of our 2020 Senior Notes and April 2019 Senior Notes were tendered and exchanged for the corresponding Registered Notes in the Registered Exchange Offer.

Commercial Paper

In February 2019, we established a commercial paper program pursuant to which we may issue unsecured commercial paper notes ("Commercial Paper") in principal amount of up to $2 billion outstanding at any time with maturities of up to 397 days from the date of issue. Commercial Paper is sold under customary terms in the commercial paper market and may be issued at a discount from par or, alternatively, may be sold at par and bear interest at rates dictated by market conditions at the time of their issuance. The discount associated with the Commercial Paper is amortized to interest expense over its term. Outstanding

Commercial Paper reduces the amount that would otherwise be available to borrow for general corporate purposes under our revolving credit facility. We had no Commercial Paper outstanding at either October 30, 2022 or October 31, 2021.

2017 Senior Notes

During the fiscal year ended October 29, 2017, Broadcom Cayman Finance Limited, which subsequently merged into BTI during fiscal year 2019 with BTI remaining as the surviving entity, and BRCM issued $17,550 million of senior unsecured notes (the "2017 Senior Notes"). Our 2017 Senior Notes are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by Broadcom and BTI. We may redeem or purchase, in whole or in part, any of the 2017 Senior Notes prior to their respective maturities, subject to a make-whole premium determined in accordance with the indenture governing the 2017 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest.

During the fiscal year ended November 4, 2018, substantially all of the 2017 Senior Notes were tendered and exchanged for notes registered with the SEC, with substantially identical terms.

Assumed CA Senior Notes

In connection with our acquisition of CA, Inc. ("CA") during fiscal year 2019, we assumed $2.25 billion of CA's outstanding senior unsecured notes (the "Assumed CA Senior Notes"). CA remains the sole obligor under the Assumed CA Senior Notes. We may redeem all or a portion of the Assumed CA Senior Notes at any time, subject to a specified make-whole premium as set forth with the indenture governing the Assumed CA Senior Notes. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest.

Fair Value of Debt

As of October 30, 2022, the estimated aggregate fair value of our debt was $33,014 million. The fair value of our senior notes was determined using quoted prices from less active markets. All of our debt obligations are categorized as Level 2 instruments.

Future Principal Payments of Debt

The future scheduled principal payments of debt as of October 30, 2022 were as follows:

Fiscal Year:	Future Scheduled Principal Payments
	(In millions)
2023	$ 403
2024	1,563
2025	495
2026	1,652
2027	3,137
Thereafter	33,968
Total	$ 41,218

As of October 30, 2022 and October 31, 2021, we were in compliance with all debt covenants.

11. Stockholders' Equity

Mandatory Convertible Preferred Stock

On September 30, 2019, we completed an offering of approximately 4 million shares of 8.00% Mandatory Convertible Preferred Stock, Series A, $0.001 par value per share ("Mandatory Convertible Preferred Stock"), which generated net proceeds of approximately $3,679 million and would automatically convert into shares of our common stock on September 30, 2022. At any time prior to September 30, 2022, holders could elect to convert each share of Mandatory Convertible Preferred Stock at the then minimum conversion rate. The conversion rates were subject to anti-dilution adjustments.

The holders of Mandatory Convertible Preferred Stock were entitled to receive, when, as and if declared by our Board of Directors, or an authorized committee thereof, out of funds legally available for payment, cumulative dividends at the annual rate of 8.00% of the liquidation preference of $1,000 per share (equivalent to $80 annually per share), payable in cash or, subject to certain limitations, by delivery of shares of our common stock or any combination of cash and shares of our common stock, at our election; provided, however, that any undeclared and unpaid dividends will continue to accumulate.

Subject to limited exceptions, no dividends may be declared or paid on shares of our common stock, unless all accumulated dividends have been paid or set aside for payment on all outstanding shares of our Mandatory Convertible Preferred Stock for all past completed dividend periods. In the event of our voluntary or involuntary liquidation, dissolution or winding-up, no distribution of our assets may be made to holders of our common stock until we have paid to holders of our Mandatory Convertible Preferred Stock a liquidation preference equal to $1,000 per share plus accumulated and unpaid dividends.

During fiscal year 2022, outstanding shares of our Mandatory Convertible Preferred Stock converted into an aggregate of approximately 12 million shares of our common stock at conversion rates ranging between 3.0894 and 3.1149 common shares per share of Mandatory Convertible Preferred Stock. We paid cash in lieu of fractional shares of common stock upon conversion.

As of October 31, 2021, we recognized $27 million of accrued preferred stock dividends, which was presented as temporary equity on our consolidated balance sheet.

Cash Dividends Declared and Paid

	Fiscal Year		
	2022	2021	2020
	(In millions, except per share data)		
Dividends per share to common stockholders	$ 16.40	$ 14.40	$ 13.00
Dividends to common stockholders	$ 6,733	$ 5,913	$ 5,235
Dividends per share to preferred stockholders	$ 80.00	$ 80.00	$ 80.00
Dividends to preferred stockholders	$ 299	$ 299	$ 299

Stock Repurchase Program

In December 2021, our Board of Directors authorized a stock repurchase program to repurchase up to $10 billion of our common stock from time to time on or prior to December 31, 2022. During fiscal year 2022, we repurchased and retired approximately 12 million shares of our common stock for $7 billion under this stock repurchase program.

In May 2022, our Board of Directors authorized another stock repurchase program to repurchase up to an additional $10 billion of our common stock from time to time through December 31, 2023.

Repurchases under our stock repurchase programs may be effected through a variety of methods, including open market or privately negotiated purchases. The timing and amount of shares repurchased will depend on the stock price, business and market conditions, corporate and regulatory requirements, alternative investment opportunities, acquisition opportunities, and other factors. We are not obligated to repurchase any specific amount of shares of common stock, and the stock repurchase programs may be suspended or terminated at any time.

Equity Incentive Award Plan

2012 Plan

In connection with the acquisition of BRCM, we assumed the BRCM 2012 Stock Incentive Plan (the "Original 2012 Plan") and outstanding unvested RSUs originally granted by BRCM under the Original 2012 Plan that were held by continuing employees. During the second quarter of fiscal year 2021, our stockholders approved the amendment and restatement of the Original 2012 Plan, now called Broadcom Inc. 2012 Stock Incentive Plan (the "Amended 2012 Plan"). Under the Amended 2012 Plan, we may grant to employees stock options and stock appreciation rights with an exercise price that is no less than the fair market value on the date of grant, restricted stock awards and RSUs. No participant may be granted such awards for more than an aggregate of 4 million shares in any fiscal year. Equity awards granted under the Amended 2012 Plan generally vest over four years. The Amended 2012 Plan reduced the number of shares available for new equity award grants to 20 million shares and removed the annual share replenishment provision provided under the Original 2012 Plan. Awards cancelled or forfeited and shares withheld to satisfy tax withholding obligations become available for future issuance. As of October 30, 2022, 21 million shares remained available for issuance under the Amended 2012 Plan.

We may grant market-based RSUs with both a service condition and a market condition as part of our equity compensation programs. The market-based RSUs generally vest over four years, subject to satisfaction of market conditions. During fiscal years 2022, 2021 and 2020, we granted market-based RSUs under which grantees may receive the number of shares ranging from 0% to 300% of the original grant at vesting based upon the total stockholder return ("TSR") on our common stock on an absolute basis and as compared to the TSR of an index group of companies.

Employee Stock Purchase Plan

The ESPP provides eligible employees with the opportunity to acquire an ownership interest in us through periodic payroll deductions, based on a 6-month look-back period, at a price equal to the lesser of 85% of the fair market value of our common stock at either the beginning or the end of the relevant offering period. The ESPP is structured as a qualified employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986. However, the ESPP is not intended to be a qualified pension, profit sharing or stock bonus plan under Section 401(a) of the Internal Revenue Code of 1986 and is not subject to the provisions of the Employee Retirement Income Security Act of 1974.

Stock-Based Compensation Expense

	Fiscal Year		
	2022	2021	2020
		(In millions)	
Cost of products sold	$ 65	$ 78	$ 109
Cost of subscriptions and services	82	65	50
Research and development	1,048	1,199	1,419
Selling, general and administrative	338	362	398
Total stock-based compensation expense	$ 1,533	$ 1,704	$ 1,976
Estimated income tax benefits for stock-based compensation	$ 255	$ 283	$ 345
Excess income tax benefits for stock-based awards exercised or released	$ 375	$ 310	$ 147

We have assumed an annualized forfeiture rate for RSUs of 5%. We will recognize additional expense if actual forfeitures are lower than we estimated, and will recognize a benefit if actual forfeitures are higher than we estimated.

During the first quarter of fiscal year 2019, the Compensation Committee of our Board of Directors approved a broad-based program of multi-year equity grants of time- and market-based RSUs (the "Multi-Year Equity Awards") in lieu of our annual employee equity awards historically granted on March 15 of each year. Each Multi-Year Equity Award vests on the same basis as four annual grants made March 15 of each year, beginning in fiscal year 2019, with successive four-year vesting periods. Stock-based compensation expense related to the Multi-Year Equity Awards was $794 million, $816 million and $902 million for fiscal years 2022, 2021 and 2020, respectively.

As of October 30, 2022, the total unrecognized compensation cost related to unvested stock-based awards was $2,704 million, which is expected to be recognized over the remaining weighted-average service period of 2.7 years.

The following table summarizes the weighted-average assumptions utilized to calculate the fair value of market-based awards granted in the periods presented:

	Fiscal Year		
	2022	2021	2020
Risk-free interest rate	1.4 %	0.3 %	1.2 %
Dividend yield	2.7 %	3.0 %	4.7 %
Volatility	37.1 %	39.0 %	31.2 %
Expected term (in years)	3.4	3.4	4.0

The risk-free interest rate was derived from the average U.S. Treasury Strips rate, which approximated the rate in effect appropriate for the term at the time of grant.

The dividend yield was based on the historical and expected dividend payouts as of the respective award grant dates.

The volatility was based on our own historical stock price volatility over the period commensurate with the expected life of the awards and the implied volatility of a 180-day call option on our own common stock measured at a specific date.

The expected term was commensurate with the awards' contractual terms.

Restricted Stock Unit Awards

A summary of time- and market-based RSU activity is as follows:

	Number of RSUs Outstanding	Weighted-Average Grant Date Fair Value Per Share
	(In millions, except per share data)	
Balance as of November 3, 2019	40	$ 188.52
Granted	3	$ 252.36
Vested	(8)	$ 210.84
Forfeited	(3)	$ 198.17
Balance as of November 1, 2020	32	$ 188.35
Granted	2	$ 408.69
Vested	(8)	$ 214.15
Forfeited	(3)	$ 189.84
Balance as of October 31, 2021	23	$ 200.38
Granted	3	$ 527.69
Vested	(7)	$ 225.52
Forfeited	(1)	$ 242.82
Balance as of October 30, 2022	18	$ 238.49

The aggregate fair value of time- and market-based RSUs that vested in fiscal years 2022, 2021 and 2020 was $4,207 million, $3,715 million, and $2,254 million, respectively, which represented the market value of our common stock on the date that the RSUs vested. The number of RSUs vested included shares of common stock that we withheld for settlement of employees' tax obligations due upon the vesting of RSUs.

Stock Option Awards

As of October 30, 2022, our stock options outstanding were not material. The aggregate intrinsic value of stock options exercised in fiscal years 2022, 2021 and 2020 was $3 million, $339 million, and $917 million, respectively.

12. Income Taxes

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

	Fiscal Year		
	2022	2021	2020
		(In millions)	
Domestic loss	$ (2,020)	$ (3,103)	$ (4,221)
Foreign income	14,454	9,868	6,664
Income from continuing operations before income taxes	$ 12,434	$ 6,765	$ 2,443

The components of the provision for and benefit from income taxes were as follows:

	Fiscal Year		
	2022	2021	2020
	(In millions)		
Current tax expense:			
Federal	$ 174	$ 446	$ 7
State	48	46	51
Foreign	762	534	506
Total	984	1,026	564
Deferred tax expense (benefit from):			
Federal	68	(876)	(627)
State	(15)	(114)	(161)
Foreign	(98)	(7)	(294)
Total	(45)	(997)	(1,082)
Total provision for (benefit from) income taxes	$ 939	$ 29	$ (518)

The following is a reconciliation of our effective tax rate to the statutory federal tax rate:

	Fiscal Year		
	2022	2021	2020
Statutory tax rate	21.0 %	21.0 %	21.0 %
State, net of federal benefit	0.2	(0.8)	(3.6)
Foreign income taxed at different rates	(19.1)	(22.8)	(48.6)
Deemed inclusion of foreign earnings	9.4	12.7	23.3
Foreign-derived intangible income deduction	—	(3.1)	(1.5)
Deferred taxes on unremitted foreign earnings	0.1	(0.7)	(1.1)
Excess tax benefits from stock-based compensation	(3.0)	(4.6)	(6.0)
Research and development credit	(1.4)	(2.3)	(4.3)
Other, net	0.3	1.0	(0.4)
Effective tax rate on income before income taxes	7.5 %	0.4 %	(21.2)%

The increase in provision for income taxes in fiscal year 2022 compared to fiscal year 2021 was primarily due to higher income from continuing operations.

The provision for income taxes in fiscal year 2021 compared to the benefit from income taxes in fiscal year 2020 was primarily due to higher income from continuing operations, offset in part by higher excess tax benefits from stock-based awards. The benefit from income taxes in fiscal year 2020 was primarily due to jurisdictional mix of income and expenses, discrete benefits from the remeasurement of certain deferred tax assets and liabilities in a foreign jurisdiction, and excess tax benefits from stock-based awards.

Our tax incentives from the Singapore Economic Development Board provide that any qualifying income earned in Singapore is subject to tax incentives or reduced rates of Singapore income tax, subject to our compliance with the conditions specified in these incentives and legislative developments. These Singapore tax incentives are expected to expire in November 2025.

We have also obtained a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. The tax holiday that we negotiated in Malaysia is also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with any such conditions specified, we will lose the related tax benefits and we could be required to refund previously realized material tax benefits.

Before taking into consideration the effects of the U.S. Tax Cuts and Jobs Act and other indirect tax impacts, the effect of these tax incentives and tax holiday was to decrease the provision for income taxes by approximately $1,821 million and $1,156 million for fiscal years 2022 and 2021, respectively, and increase the benefit from income taxes by approximately $833 million for fiscal year 2020.

Significant components of our deferred tax assets and liabilities consisted of the following:

	October 30, 2022	October 31, 2021
	(In millions)	
Deferred income tax assets:		
Net operating loss, credit and other carryforwards	$ 1,808	$ 1,774
Deferred revenue	645	1,332
Employee stock awards	183	192
Other deferred income tax assets	499	446
Gross deferred income tax assets	3,135	3,744
Less: valuation allowance	(1,777)	(1,782)
Deferred income tax assets	1,358	1,962
Deferred income tax liabilities:		
Depreciation and amortization	341	847
Unamortized discount and issuance costs	322	374
Foreign earnings not indefinitely reinvested	86	73
Other deferred income tax liabilities	36	—
Deferred income tax liabilities	785	1,294
Net deferred income tax assets	$ 573	$ 668

We continue to indefinitely reinvest $2,112 million of certain accumulated foreign earnings. The unrecognized deferred income tax liability related to these earnings is estimated to be $222 million. All other current and future earnings of all our foreign subsidiaries are not considered permanently reinvested.

As of October 30, 2022, we had tax effected U.S. state net operating loss carryforwards of $200 million and foreign net operating loss carryforwards of $190 million, all of which expire in various years beginning fiscal year 2023. We had $1,334 million of state research and development tax credits which begin to expire in fiscal year 2023. We have provided a valuation allowance on substantially all state tax credits and state and foreign net operating loss carryforwards as we do not expect them to be realized.

Uncertain Tax Positions

The following table reconciles the beginning and ending balance of gross unrecognized tax benefits:

	Fiscal Year		
	2022	2021	2020
		(In millions)	
Beginning balance	$ 5,030	$ 4,748	$ 4,422
Lapses of statutes of limitations	(50)	(58)	(95)
Increases in balances related to tax positions taken during prior periods (including those related to acquisitions made during the year)	—	41	98
Decreases in balances related to tax positions taken during prior periods	(113)	—	(14)
Increases in balances related to tax positions taken during current period	288	337	379
Decreases in balances related to settlements with taxing authorities	(38)	(38)	(42)
Ending balance	$ 5,117	$ 5,030	$ 4,748

We recognize interest and penalties related to unrecognized tax benefits within the provision for (benefit from) income taxes. Accrued interest and penalties were included within other long-term liabilities. During fiscal years 2022 and 2021, we recognized interest and penalties of $25 million and $46 million, respectively, within the provision for income taxes. During fiscal year 2020, we recognized interest and penalties of $37 million within the benefit from income taxes. As of October 30, 2022 and October 31, 2021, the combined amount of cumulative accrued interest and penalties was approximately $411 million and $386 million, respectively.

As of October 30, 2022 and October 31, 2021, approximately $5,528 million and $5,416 million, respectively, of the unrecognized tax benefits and accrued interest and penalties would, if recognized, benefit our effective income tax rate. We are subject to U.S. income tax examination for fiscal years 2015 and later. Certain of our acquired companies are subject to tax examinations in major jurisdictions outside of the U.S. for fiscal years 2008 and later. It is possible that our existing unrecognized tax benefits may change up to $163 million as a result of lapses of the statute of limitations for certain audit periods and/or audit examinations expected to be completed within the next 12 months.

13. Segment Information

Reportable Segments

We have two reportable segments: semiconductor solutions and infrastructure software. Each segment has separate financial information that is utilized on a regular basis by the CODM in determining how to allocate resources and evaluate performance. The reportable segments are determined based on several factors including, but not limited to, customer base, homogeneity of products, technology, delivery channels and similar economic characteristics.

Semiconductor solutions. We provide semiconductor solutions for managing the movement of data in data center, service provider, enterprise and embedded networking applications. We provide a broad variety of radio frequency semiconductor devices, wireless connectivity solutions, custom touch controllers, and inductive charging solutions for mobile applications. We also provide semiconductor solutions for enabling the set-top box and broadband access markets and for enabling secure movement of digital data to and from host machines, such as servers, personal computers and storage systems, to the underlying storage devices, such as hard disk drives and solid state drives. We also provide a broad variety of products for the general industrial and automotive markets. Our semiconductor solutions segment also includes our IP licensing.

Infrastructure software. We provide a portfolio of software solutions that enables customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. Our portfolio of infrastructure and security software is designed to modernize, optimize, and secure the most complex hybrid environments, enabling scalability, agility, automation, insights, resiliency and security. We also offer mission critical FC SAN products and related software.

Our CODM assesses the performance of each segment and allocates resources to each segment based on net revenue and operating results and does not evaluate each segment using discrete asset information. Operating results by segment include items that are directly attributable to each segment and also include shared expenses such as marketing, general and administrative activities, facilities and information technology ("IT") expenses. Shared expenses are primarily allocated based on revenue, headcount or evenly between the segments.

Unallocated Expenses

Unallocated expenses include amortization of acquisition-related intangible assets, stock-based compensation expense, restructuring, impairment and disposal charges, acquisition-related costs, and other costs, which are not used in evaluating the results of, or in allocating resources to, our segments. Acquisition-related costs include transaction costs and any costs directly related to the acquisition and integration of acquired businesses.

Depreciation expense directly attributable to each reportable segment is included in operating results for each segment. However, the CODM does not evaluate depreciation expense by operating segment and, therefore, it is not separately presented. There was no inter-segment revenue for any of the periods presented. The accounting policies of the segments are the same as those described in the summary of significant accounting policies.

	Fiscal Year		
	2022	2021	2020
		(In millions)	
Net revenue:			
Semiconductor solutions	$ 25,818	$ 20,383	$ 17,267
Infrastructure software	7,385	7,067	6,621
Total net revenue	$ 33,203	$ 27,450	$ 23,888
Operating income:			
Semiconductor solutions	$ 15,075	$ 10,976	$ 8,576
Infrastructure software	5,219	4,936	4,363
Unallocated expenses	(6,069)	(7,393)	(8,925)
Total operating income	$ 14,225	$ 8,519	$ 4,014

Geographic Information

Net revenue by country is based primarily on the geographic shipment or delivery location as specified by the distributors, OEMs, contract manufacturers, channel partners, or software customers who purchased our products or services. For the majority of our products, title and control transfer to our customers in Penang, Malaysia. The products are then transported to the customer specific locations. Net revenue from the United States for fiscal years 2022, 2021 and 2020 was $5,915 million, $5,285 million and $4,778 million, respectively. Net revenue from China (including Hong Kong) for fiscal years 2022, 2021 and 2020 was $11,637 million, $9,752 million and $7,808 million, respectively. Net revenue from Singapore for fiscal years 2022 and 2021 was $4,003 million and $2,754 million, respectively (the amount was less than 10% for fiscal year 2020). Net revenue from other foreign countries for fiscal years 2022, 2021 and 2020 was $11,648 million, $9,659 million and $11,302 million, respectively. These geographic delivery locations are not necessarily indicative of the geographic location of our end customers or the country in which our end customers sell devices containing our products. For example, we believe a substantial portion of our products shipped or delivered to China (including Hong Kong) is included in devices sold by our end customers in the United States and Europe.

Long-lived assets include property, plant and equipment and are based on the physical location of the assets.

	October 30, 2022	October 31, 2021
	(In millions)	
Long-lived assets:		
United States	$ 1,441	$ 1,540
Taiwan	318	313
Other	464	495
Total long-lived assets	$ 2,223	$ 2,348

Significant Customer Information

We sell our products through our direct sales force and a select network of distributors and channel partners globally. Two customers accounted for 15% and 11% of our net accounts receivable balance as of October 30, 2022. No customer accounted for more than 10% of our net accounts receivable balance as of October 31, 2021. During fiscal years 2022, 2021 and 2020, one customer accounted for 20%, 18% and 13% of our net revenue, respectively. Revenue from this customer was included in our semiconductor solutions segment.

14. Commitments and Contingencies

Commitments

The following table summarizes contractual obligations and commitments as of October 30, 2022:

Fiscal Year:	Purchase Commitments	Other Contractual Commitments
	(In millions)	
2023	$ 199	$ 304
2024	211	261
2025	90	147
2026	11	162
2027	7	112
Thereafter	7	447
Total	$ 525	$ 1,433

Purchase Commitments. Represents unconditional purchase obligations that include agreements to purchase goods or services, primarily inventory, that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable price provisions, and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty.

Other Contractual Commitments. Represents amounts payable pursuant to agreements related to IT, human resources, and other service agreements.

Due to the inherent uncertainty with respect to the timing of future cash outflows associated with our unrecognized tax benefits at October 30, 2022, we are unable to reliably estimate the timing of cash settlement with the respective taxing authorities. Therefore, $3,229 million of unrecognized tax benefits and accrued interest and penalties classified within other long-term liabilities on our consolidated balance sheet as of October 30, 2022 have been excluded from the table above.

Contingencies

From time to time, we are involved in litigation that we believe is of the type common to companies engaged in our lines of business, including commercial disputes, employment issues, tax disputes and disputes involving claims by third parties that our activities infringe their patent, copyright, trademark or other IP rights, as well as regulatory investigations or inquiries. Legal proceedings and regulatory investigations or inquiries are often complex, may require the expenditure of significant funds and other resources, and the outcome of such proceedings is inherently uncertain, with material adverse outcomes possible. IP property claims generally involve the demand by a third-party that we cease the manufacture, use or sale of the allegedly infringing products, processes or technologies and/or pay substantial damages or royalties for past, present and future use of the allegedly infringing IP. Claims that our products or processes infringe or misappropriate any third-party IP rights (including claims arising through our contractual indemnification of our customers) often involve highly complex, technical issues, the outcome of which is inherently uncertain. Moreover, from time to time, we pursue litigation to assert our IP rights. Regardless of the merit or resolution of any such litigation, complex IP litigation is generally costly and diverts the efforts and attention of our management and technical personnel.

Lawsuits Relating to California Institute of Technology

California Institute of Technology ("Caltech") filed a complaint against Broadcom and Apple Inc. on May 26, 2016 in the United States District Court for the Central District of California (the "U.S. Central District Court"), and an amended complaint adding Cypress Semiconductor Corporation as a defendant on August 15, 2016. The amended complaint alleged that chips that support certain error correction codes as specified in IEEE Standards 802.11n and 802.11ac willfully infringed four patents related to error correction coding: U.S. Patent Nos. 7,116,710; 7,421,032; 7,916,781; and 8,284,833 ("'833 patent"). Prior to trial, Caltech dismissed its claims against Cypress and withdrew its infringement allegations as to '833 patent. The complaint sought a preliminary and permanent injunction, damages, pre- and post-judgment interest, as well as attorneys' fees, costs, and expenses. The trial was held in January 2020, and on January 29, 2020, the jury issued its verdict finding infringement and awarding Caltech past damages of $270.2 million from Broadcom and $837.8 million from Apple, for which Apple is seeking indemnification from Broadcom. On August 3, 2020, the U.S. Central District Court issued its judgment, awarding Caltech past damages in the amounts awarded by the jury, as well as pre- and post-judgment interest. Additionally, the U.S. Central District Court awarded Caltech an unspecified amount of ongoing royalties to be determined after the anticipated appeals process is resolved. Neither the jury nor the U.S. Central District Court found willful infringement, which if it had, could have resulted in enhanced damages up to three times the amount awarded. Broadcom and Apple appealed to the United States Court of

Appeals for the Federal Circuit (the "Federal Circuit Court"). In February 2022, the Federal Circuit Court affirmed infringement of two patents, both of which expired in August 2020, but it did not address all issues and ordered a new trial on damages and on the infringement of the 7,916,781 patent, which also expired in August 2020. In May 2022, the Federal Circuit Court denied the petition for rehearing filed by Broadcom and Apple, and remanded the case to the U.S. Central District Court. Subsequently, Caltech withdrew its infringement allegations as to the 7,916,781 patent.

We believe that the evidence and the law do not support the U.S. Central District Court's findings of infringement. We cannot reasonably estimate the ultimate outcome as the Federal Circuit Court vacated the above damages, and a number of factors (including a retrial at the lower court and further appeals) could significantly change the assessment of damages. As a result, we have not recorded a reserve with respect to this litigation, in accordance with the applicable accounting standards.

Other Matters

In addition to the matters discussed above, we are currently engaged in a number of legal actions in the ordinary course of our business.

Contingency Assessment

We do not believe, based on currently available facts and circumstances, that the final outcome of any pending legal proceedings or ongoing regulatory investigations, taken individually or as a whole, will have a material adverse effect on our consolidated financial statements. However, lawsuits may involve complex questions of fact and law and may require the expenditure of significant funds and other resources to defend. The results of litigation or regulatory investigations are inherently uncertain, and material adverse outcomes are possible. From time to time, we may enter into confidential discussions regarding the potential settlement of such lawsuits. Any settlement of pending litigation could require us to incur substantial costs and other ongoing expenses, such as future royalty payments in the case of an IP dispute.

During the periods presented, no material amounts have been accrued or disclosed in the accompanying consolidated financial statements with respect to loss contingencies associated with any other legal proceedings or regulatory investigations, as potential losses for such matters are not considered probable and ranges of losses are not reasonably estimable. These matters are subject to many uncertainties and the ultimate outcomes are not predictable. There can be no assurances that the actual amounts required to satisfy any liabilities arising from the matters described above will not have a material adverse effect on our consolidated financial statements.

Other Indemnifications

As is customary in our industry and as provided for in local law in the U.S. and other jurisdictions, many of our standard contracts provide remedies to our customers and others with whom we enter into contracts, such as defense, settlement, or payment of judgment for IP claims related to the use of our products. From time to time, we indemnify customers, as well as our suppliers, contractors, lessors, lessees, companies that purchase our businesses or assets and others with whom we enter into contracts, against combinations of loss, expense, or liability arising from various triggering events related to the sale and the use of our products, the use of their goods and services, the use of facilities and state of our owned facilities, the state of the assets and businesses that we sell and other matters covered by such contracts, usually up to a specified maximum amount. In addition, from time to time we also provide protection to these parties against claims related to undiscovered liabilities, additional product liabilities or environmental obligations. In our experience, claims made under such indemnifications are rare and the associated estimated fair value of the liability is not material.

15. Restructuring, Impairment and Disposal Charges

Restructuring Charges

From time to time, we initiate cost reduction activities to integrate acquired businesses, to align our workforce with strategic business activities, or to improve efficiencies in our operations. We recognized charges of $55 million, $149 million and $233 million during fiscal years 2022, 2021 and 2020, respectively. These charges were primarily recognized in operating expenses.

The following table summarizes the significant activities within, and components of, the restructuring liabilities:

	Employee Termination Costs	Other Exit Costs[a]	Total
	(In millions)		
Balance as of November 3, 2019	$ 69	$ 39	$ 108
Restructuring charges[b]	186	47	233
Utilization	(221)	(50)	(271)
Effect of adoption of Topic 842[c]	—	(36)	(36)
Balance as of November 1, 2020	34	—	34
Restructuring charges	100	13	113
Utilization	(130)	(13)	(143)
Balance as of October 31, 2021	4	—	4
Restructuring charges	24	6	30
Utilization	(24)	(4)	(28)
Balance as of October 30, 2022	$ 4	$ 2	$ 6

(a) Included $30 million of restructuring expense related to the write-down of certain lease-related ROU assets and other lease-related charges during fiscal year 2020.

(b) Included $19 million of restructuring expense related to discontinued operations recognized during fiscal year 2020, which was included in loss from discontinued operations.

(c) Upon adoption of Topic 842, certain restructuring lease liabilities were required to be recognized as a reduction to the corresponding ROU assets.

Restructuring, impairment and disposal charges in our consolidated statement of operations for the fiscal years 2022 and 2021 included $25 million and $36 million, respectively, for the write-down of certain lease-related ROU assets and other lease-related charges. As of each October 30, 2022 and October 31, 2021, short-term and long-term lease liabilities included $52 million of liabilities related to restructuring activities.

Impairment and Disposal Charges

During fiscal years 2022, 2021 and 2020, impairment and disposal charges of $7 million, $16 million and $19 million, respectively, primarily related to leasehold improvements.

16. Subsequent Events

Cash Dividends Declared

On December 6, 2022, our Board of Directors declared a quarterly cash dividend of $4.60 per share on our common stock, payable on December 30, 2022 to stockholders of record on December 20, 2022.

Schedule II — Valuation and Qualifying Accounts

	Balance at Beginning of Period	Additions to Allowances	Charges Utilized/ Write-offs	Balance at End of Period
	(In millions)			
Accounts receivable allowances:				
Distributor credit allowances [1]				
Fiscal year ended October 30, 2022	$ 128	$ 484	$ (487)	$ 125
Fiscal year ended October 31, 2021	$ 149	$ 756	$ (777)	$ 128
Fiscal year ended November 1, 2020	$ 153	$ 696	$ (700)	$ 149
Other accounts receivable allowances [2]				
Fiscal year ended October 30, 2022	$ 2	$ 10	$ (11)	$ 1
Fiscal year ended October 31, 2021	$ 28	$ 14	$ (40)	$ 2
Fiscal year ended November 1, 2020	$ 38	$ 84	$ (94)	$ 28
Income tax valuation allowances:				
Fiscal year ended October 30, 2022	$ 1,782	$ 118	$ (123)	$ 1,777
Fiscal year ended October 31, 2021	$ 1,707	$ 121	$ (46)	$ 1,782
Fiscal year ended November 1, 2020	$ 1,563	$ 149	$ (5)	$ 1,707

---

(1) Distributor credit allowances relate to price adjustments and other allowances.

(2) Other accounts receivable allowances primarily include sales returns and allowance for doubtful accounts.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), evaluated the effectiveness of our disclosure controls and procedures as of October 30, 2022. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of October 30, 2022, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by the Board, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of us are being made only in accordance with authorizations of management and directors; and
- 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 financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

Our management assessed the effectiveness of our internal control over financial reporting as of October 30, 2022. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control-Integrated Framework* (2013)*.* Based on this assessment, our management concluded that, as of October 30, 2022, our internal control over financial reporting is effective based on those criteria.

The effectiveness of our internal control over financial reporting, as of October 30, 2022 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included in Part II, Item 8. of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fourth quarter ended October 30, 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. Although we have modified our workplace practices globally due to the COVID-19 pandemic, resulting in some of our employees working remotely, this has not meaningfully affected our internal controls over financial reporting. We are continually monitoring and assessing the COVID-19 situation on our internal controls to minimize the impact on their design and operating effectiveness.

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 Item 10 is incorporated herein by reference from sections entitled "Board of Directors," "Corporate Governance" and "Proposal 1 — Election of Directors" in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders. Our executive officers are listed at the end of Item 1 of this Annual Report on Form 10-K.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is incorporated herein by reference from sections entitled "Board of Directors — Director Compensation," "Board of Directors — Board Committees — Compensation Committee — Compensation Committee Interlocks and Insider Participation," "Compensation Discussion and Analysis," "Compensation Committee Report" and "Executive Compensation" in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 12 is incorporated herein by reference from sections entitled "Stockholder Information — Security Ownership of Certain Beneficial Owners, Directors and Executive Officers" and "Equity Compensation Plan Information" in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Item 13 is incorporated herein by reference from sections entitled "Board of Directors" and "Certain Relationships and Related Party Transactions" in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 is incorporated herein by reference from the section entitled "Proposal 2 — Ratification of Appointment of Independent Registered Public Accounting Firm" in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The following consolidated financial statements are included in Item 8 of this Annual Report on Form 10-K:

2. Financial Statement Schedules

The financial statement schedule of the Registrant and its subsidiaries for fiscal years 2022, 2021 and 2020 required by Item 15(a) (Schedule II, Valuation and Qualifying Accounts) is included in Item 8 of this Annual Report on Form 10-K:

Schedules not filed have been omitted because they are not applicable, are not required or the information required to be set forth therein is included in the financial statements or notes thereto.

3. Exhibits

The documents set forth below are filed herewith or incorporated by reference to the location indicated.

Exhibit Number	Description	Incorporated by Reference Form (File No.)	Filing Date	Filed Herewith
2.1#	Agreement and Plan of Merger, dated as of July 11, 2018, by and among Broadcom Inc., Collie Acquisition Corp. and CA, Inc.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	July 12, 2018	
2.2#	Asset Purchase Agreement, dated August 8, 2019, by and between Broadcom Inc. and Symantec Corporation.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	August 9, 2019	
2.3#	APA Letter Agreement, dated as of October 1, 2020, by and between Broadcom Inc. and NortonLifeLock Inc.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 18, 2020	
2.4	Agreement and Plan of Merger, dated as of May 26, 2022, by and among Broadcom Inc., VMware, Inc., Verona Holdco, Inc., Verona Merger Sub, Inc., Barcelona Merger Sub 2, Inc. and Barcelona Merger Sub 3, LLC.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 26, 2022	
3.1	Amended and Restated Certificate of Incorporation.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No.001-38449)	April 4, 2018	

Table of Contents

Exhibit Number	Description	Incorporated by Reference		Filed Herewith
		Form (File No.)	Filing Date	
3.2	Certificate of Designation of the 8.00% Mandatory Convertible Preferred Stock, Series A.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2019	
3.3	Amended and Restated Bylaws.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
4.1	Form of Common Stock Certificate.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 14, 2018	
4.2	Form of Certificate of the 8.00% Mandatory Convertible Preferred Stock, Series A (included in the Exhibit 3.2).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2019	
4.3	Description of Common Stock.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 20, 2019	
4.4	Description of 8.00% Mandatory Convertible Preferred Stock, Series A.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 20, 2019	
4.5	Indenture, dated as of January 19, 2017, by and among the Broadcom Corporation and Broadcom Cayman Finance Limited (the "Co-Issuers"), the guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.6	Supplement Indenture to the January 2017 Indenture, dated as of April 9, 2018.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2018	
4.7	Second Supplement Indenture to the January 2017 Indenture, dated as of January 25, 2019.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 25, 2019	
4.8	Form of 3.000% Senior Notes due 2022 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.9	Form of 3.625% Senior Notes due 2024 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.10	Form of 3.875% Senior Notes due 2027 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.11	Indenture, dated as of October 17,	Broadcom Limited	October 17,	

Table of Contents

Exhibit Number	Description	Incorporated by Reference		Filed Herewith
		Form (File No.)	Filing Date	
4.13	Second Supplemental Indenture to October 2017 Indenture, dates as of January 25, 2019.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 25, 2019	
4.14	Form of 2.650% Senior Notes due 2023 (included in Exhibit 4.11).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.15	Form of 3.125% Senior Notes due 2025 (included in Exhibit 4.11).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.16	Form of 3.500% Senior Notes due 2028 (included in Exhibit 4.11).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.17	Indenture, dated as of April 5, 2019, by and among the Company, as Issuer, Broadcom Technologies Inc., Broadcom Corporation and Broadcom Cayman Finance Limited (the "2019 Guarantors"), and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.18	Form of 3.625% Senior Notes due 2024 (included in Exhibit 4.17).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.19	Form of 4.250% Senior Notes due 2026 (included in Exhibit 4.17).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.20	Form of 4.750% Senior Notes due 2029 (included in Exhibit 4.17).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.21	Indenture, dated as of April 9, 2020, by and among the Company, as Issuer, Broadcom Technologies Inc. and Broadcom Corporation (the "2020 Guarantors"), and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.22	Form of 4.700% Senior Notes due 2025 (included in Exhibit 4.21).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.23	Form of 5.000% Senior Notes due 2030 (included in Exhibit 4.21).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.24	Indenture, dated as of May 8, 2020, by and among the	Broadcom Inc. Current Report on	May 8, 2020	

Table of Contents

Exhibit Number	Description	Incorporated by Reference Form (File No.)	Incorporated by Reference Filing Date	Filed Herewith
4.26	Form of 3.150% Senior Notes due 2025 (included in Exhibit 4.24).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.27	Form of 4.150% Senior Notes due 2030 (included in Exhibit 4.24).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.28	Form of 4.300% Senior Notes due 2032 (included in Exhibit 4.24).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.29	Indenture, dated as of May 21, 2020, by and among the Company, the 2020 Guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.30	Form of 3.459% Senior Notes due 2026 (included in Exhibit 4.29).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.31	Form of 4.110% Senior Notes due 2028 (included in Exhibit 4.29).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.32	Indenture, dated as of January 19, 2021, by and among the Company, the 2020 Guarantors and Wilmington Trust, National Association, as Trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.33	Form of 1.950% Senior Notes due 2028 (included in Exhibit 4.32).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.34	Form of 2.450% Senior Notes due 2031 (included in Exhibit 4.32).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.35	Form of 2.600% Senior Notes due 2033 (included in Exhibit 4.32).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.36	Form of 3.500% Senior Notes due 2041 (included in Exhibit 4.32).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.37	Form of 3.750% Senior Notes due 2051 (included in Exhibit 4.32).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.38	Registration Rights Agreement, dated as of January 19, 2021, by and among the Company, the 2020 Guarantors and Morgan	Broadcom Inc. Current Report on Form 8-K (Commission File	January 19, 2021	

Table of Contents

Exhibit Number	Description	Incorporated by Reference: Form (File No.)	Incorporated by Reference: Filing Date	Filed Herewith
4.39	Indenture, dated as of March 31, 2021, by and between the Company and Wilmington Trust, National Association, as Trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	March 31, 2021	
4.40	Form of 3.419% Senior Notes due 2033 (included in Exhibit 4.39).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	March 31, 2021	
4.41	Form of 3.469% Senior Notes due 2034 (included in Exhibit 4.39).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	March 31, 2021	
4.42	Registration Rights Agreement, dated as of March 31, 2021, by and among the Company and BofA Securities, Inc. and HSBC Securities (USA) Inc., as dealer-managers in connection with the March 2021 Exchange Offer.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	March 31, 2021	
4.43	Indenture, dated as of September 30, 2021, by and between the Company and Wilmington Trust, National Association, as Trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2021	
4.44	Form of 3.137% Senior Notes due 2035 (included in Exhibit 4.43).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2021	
4.45	Form of 3.187% Senior Notes due 2036 (included in Exhibit 4.43).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2021	
4.46	Registration Rights Agreement, dated as of September 30, 2021, by and among the Company and BNP Paribas Securities Corp., J.P. Morgan Securities LLC and TD Securities (USA) LLC, as dealer-mangers in connection with the September 2021 exchange offer.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2021	
4.47	Indenture, dated April 14, 2022, between the Company and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 15, 2022	
4.48	Form of 4.00% Senior Notes due 2029 (included in Exhibit 4.47).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 15, 2022	
4.49	Form of 4.15% Senior Notes due 2032 (included in Exhibit 4.47).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 15, 2022	
4.50	Registration Rights Agreement, dated as of April 14, 2022, between the Company and BofA Securities, Inc., HSBC Securities	Broadcom Inc. Current Report on Form 8-K (Commission File	April 15, 2022	

Table of Contents

Exhibit Number	Description	Incorporated by Reference Form (File No.)	Filing Date	Filed Herewith
4.52	Form of 4.926% Senior Notes due 2037 (included in Exhibit 4.51).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 18, 2022	
4.53	Registration Rights Agreement, dated April 18, 2022, between the Company and Barclays Capital Inc., BBVA Securities Inc., BNP Paribas Securities Corp. and J.P. Morgan Securities LLC, as dealer-managers in connection with the April 2022 Exchange Offer.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 18, 2022	
10.1	Form of Indemnification and Advancement Agreement (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.2	Credit Agreement, dated as of May 7, 2019, among Broadcom Inc., the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 7, 2019	
10.3	Credit Agreement, dated as of November 4, 2019, among Broadcom Inc., the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	November 4, 2019	
10.4	Credit Agreement, dated as of January 19, 2021, among the Company, the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
10.5	Lease Agreement dated August 10, 2017 between Five Point Office Venture I, LLC and Broadcom Corporation.	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.6	First Amendment to Lease Agreement by and between Five Point Office Venture 1, LLC and Broadcom Corporation.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 18, 2020	
10.7*	Settlement and Patent License and Non-Assert Agreement by and between Qualcomm Incorporated and Broadcom Corporation.	Broadcom Corporation Current Report on Form 8-K/A (Commission File No. 000-23993)	July 23, 2009	
10.8+	Avago Technologies Limited 2009 Equity Incentive Award Plan.	Amendment No. 5 to Avago Technologies Limited Registration Statement on Form S-1 (Commission File No. 333-153127)	July 27, 2009	
10.9+	Broadcom Inc. Employee Stock Purchase Plan (as amended and restated on April 1, 2019).	Broadcom Inc. Definitive Proxy Statement on Schedule 14A	February 19, 2019	

Table of Contents

Exhibit Number	Description	Incorporated by Reference Form (File No.)	 Filing Date	Filed Herewith
10.12+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.13+	Broadcom Inc. 2012 Stock Incentive Plan (as amended and restated on April 5, 2021).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 11, 2021	
10.14+	Form of Annual Bonus Plan for Executive Employees.	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.15+	Form of Option Agreement under Avago Technologies Limited 2009 Equity Incentive Plan.	Amendment No. 5 to Avago Technologies Limited Registration Statement on Form S-1 (Commission File No. 333-153127)	July 27, 2009	
10.16+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.17+	Form of Agreement for Multi-Year Equity Award of Restricted Stock Unit Award under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 6, 2018	
10.18+	Form of Performance Share Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective March 13, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018	
10.19+	Form of Agreement for Multi-Year Equity Award of Performance Stock Units under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 6, 2018	
10.20+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective December 8, 2020).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 18, 2020	
10.21+	Form of Performance Stock Unit Agreement (Relative TSR) under LSI Corporation 2003 Equity Incentive Plan, as amended (effective December 8, 2020).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 18, 2020	
10.22+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.23+	Form of Restricted Stock Unit Award Agreement under Broadcom Inc. 2012 Stock Incentive Plan (effective April 5, 2021).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 11, 2021	

Table of Contents

Exhibit Number	Description	Incorporated by Reference		Filed Herewith
		Form (File No.)	Filing Date	
10.26+	Form of Performance Stock Unit Award Agreement (Price Contingency) under Broadcom Inc. 2012 Stock Incentive Plan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	November 2, 2022	
10.27+	Performance Stock Unit Award Agreement, dated April 5, 2021, between Broadcom Inc. and Hock E. Tan.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 11, 2021	
10.28+	Policy on Acceleration of Executive Staff Equity Awards in the Event of Permanent Disability (as amended June 2, 2021).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	June 3, 2021	
10.29+	Policy on Acceleration of Equity Awards in the Event of Death (as amended June 2, 2021).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	June 3, 2021	
10.30+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Hock E. Tan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.31+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Thomas H. Krause, Jr.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.32+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Charlie B. Kawwas.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.33+	Severance Benefits Agreement, dated September 26, 2017, between Broadcom Limited and Mark Brazeal.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.34+	Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Kirsten M. Spears.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
21.1	List of Subsidiaries.			X
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.			X
24.1	Power of Attorney (see signature page to this Form 10-K).			X
31.1	Certification of Principal Executive Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			X
31.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the			X

Exhibit Number	Description	Incorporated by Reference: Form (File No.)	Incorporated by Reference: Filing Date	Filed Herewith
32.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			X
99.1	Voting Agreement, dated as of May 26, 2022, by and among Broadcom Inc., Michael S. Dell and Susan Lieberman Dell Separate Property Trust.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 26, 2022	
99.2	Voting Agreement, dated as of May 26, 2022, by and among Broadcom Inc., Silver Lake Partners IV, L.P., Silver Lake Technology Investors IV, L.P., Silver Lake Partners V DE (AIV), L.P., Silver Lake Technology Investors V, L.P., SL SPV-2, L.P. and Silver Lake Group, L.L.C.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 26, 2022	
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.			X
101.SCH	XBRL Schema Document			X
101.CAL	XBRL Calculation Linkbase Document			X
101.DEF	XBRL Definition Linkbase Document			X
101.LAB	XBRL Labels Linkbase Document			X
101.PRE	XBRL Presentation Linkbase Document			X
104	Cover Page Interactive Data File - the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.			X

Notes:

+ Indicates a management contract or compensatory plan or arrangement.

Schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Broadcom Inc. hereby undertakes to furnish supplementally copies of any omitted schedules upon request by the SEC.

* Certain information omitted pursuant to a request for confidential treatment filed with the SEC.

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.

BROADCOM INC.

By: **/s/ Hock E. Tan**

Name: Hock E. Tan

Title: President and Chief Executive Officer

Date: December 16, 2022

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Hock E. Tan, Kirsten M. Spears and Mark D. Brazeal, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the Registrant in the capacities indicated and on the dates indicated.

Signature	**Title**
/s/ Hock E. Tan **Hock E. Tan**	President and Chief Ex Officer and Direc (Principal Executive O
/s/ Kirsten M. Spears **Kirsten M. Spears**	Chief Financial Off (Principal Financial Officer Accounting Office
/s/ Henry Samueli **Henry Samueli**	Chairman of the Board o
/s/ Eddy W. Hartenstein **Eddy W. Hartenstein**	Lead Independent D
/s/ Diane M. Bryant **Diane M. Bryant**	Director
/s/ Gayla J. Delly **Gayla J. Delly**	Director
/s/ Raul F. Fernandez **Raul F. Fernandez**	Director
/s/ Check Kian Low **Check Kian Low**	Director
/s/ Justine F. Page **Justine F. Page**	Director
/s/ Harry L. You **Harry L. You**	Director

Table of Contents

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, DC 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 October 31, 2021

OR

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

For the transition period from to

Broadcom Inc.

Delaware	**1320 Ridder Park Drive San Jose, CA 95131-2313**	**001-38449**	**35-2617**
(State or Other Jurisdiction of Incorporation or Organization)		**(Commission File Number)**	**(I.R.S. Employer Identificatio No.)**

(408) 433-8000

(Exact Name of Registrant as Specified in Its Charter

Address of Principal Executive Offices, Including Zip Code

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, $0.001 par value	AVGO	The NASDAQ Global Select Market
8.00% Mandatory Convertible Preferred Stock, Series A, $0.001 par value	AVGOP	The NASDAQ Global Select 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, a 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	☐	Sr

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 voting and non-voting common equity held by non-affiliates as of April 30, 2021, based upon the closing sale price of such shares on The Nasdaq Global Select Market on such date was approximately $182.8 billion.

As of November 26, 2021, there were 412,873,968 shares of our common stock outstanding.

Documents Incorporated by Reference

Portions of the registrant’s definitive Proxy Statement for its 2022 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K.

BROADCOM INC.
2021 ANNUAL REPORT ON FORM 10-K

TABLE OF CONTENTS

PART I

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws and particularly in Item 1: "Business," Item 1A: "Risk Factors," Item 3: "Legal Proceedings" and Item 7: "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Annual Report on Form 10-K. These statements are indicated by words or phrases such as "anticipate," "expect," "estimate," "seek," "plan," "believe," "could," "intend," "will," and similar words or phrases. These forward-looking statements may include projections of financial information; statements about historical results that may suggest trends for our business; statements of the plans, strategies, and objectives of management for future operations; statements of expectation or belief regarding future events (including any acquisitions we may make), technology developments, our products, product sales, expenses, liquidity, cash flow and growth rates, or enforceability of our intellectual property rights; any backlog; and the effects of seasonality on our business. Such statements are based on current expectations, estimates, forecasts and projections of our industry performance and macroeconomic conditions, based on management's judgment, beliefs, current trends and market conditions, and involve risks and uncertainties that may cause actual results to differ materially from those contained in the forward-looking statements. We derive most of our forward-looking statements from our operating budgets and forecasts, which are based upon many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results. Accordingly, we caution you not to place undue reliance on these statements. Material factors that could cause actual results to differ materially from our expectations are summarized and disclosed under "Risk Factors" in Part I, Item 1A of this Annual Report on Form 10-K.

Unless stated otherwise or the context otherwise requires, references to "Broadcom," "we," "our," and "us" mean Broadcom Inc. and its consolidated subsidiaries. Our fiscal year ends on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. We refer to our fiscal years by the calendar year in which they end. For example, the fiscal year ended October 31, 2021 was a 52-week year.

ITEM 1. BUSINESS

Overview

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Our over 50-year history of innovation dates back to our diverse origins from Hewlett-Packard Company, AT&T, LSI Corporation, Broadcom Corporation, Brocade Communications Systems LLC ("Brocade"), CA, Inc. and Symantec Enterprise Security. Over the years, we have assembled a large team of semiconductor and software design engineers around the world. We maintain design, product and software development engineering resources at locations in the U.S., Asia, Europe and Israel, providing us with engineering expertise worldwide. We strategically focus our research and development resources to address niche opportunities in our target markets and leverage our extensive portfolio of U.S. and other patents, and other intellectual property ("IP") to integrate multiple technologies and create system-on-chip ("SoC") component and software solutions that target growth opportunities. We design products and software that deliver high-performance and provide mission critical functionality.

We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor ("CMOS") based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. We differentiate ourselves through our high performance design and integration capabilities and focus on developing products for target markets where we believe we can earn attractive margins.

Our infrastructure software solutions enable customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms. Many of the largest companies in the world, including most of the Fortune 500, and many government agencies rely on our software solutions to help manage and secure their on-premise and hybrid cloud environments. Our portfolio of industry-leading infrastructure and security software is designed to modernize, optimize, and secure the most complex hybrid environments, enabling scalability, agility, automation, insights, resiliency and security. We also offer mission critical fibre channel storage area networking ("FC SAN") products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products.

Business Strategy

Our strategy is to combine best-of-breed technology leadership in semiconductor and infrastructure software solutions, with unmatched scale, on a common sales and administrative platform to deliver a comprehensive suite of infrastructure technology products to the world's leading business and government customers. We seek to achieve this through responsibly financed acquisitions of category-leading businesses and technologies, as well as investing extensively in research and development, to ensure our products retain their technology leadership. This strategy results in a robust business model designed to drive diversified and sustainable operating and financial results.

Products and Markets

Semiconductor Solutions

Semiconductors are made by imprinting a network of electronic components onto a semiconductor wafer. These devices are designed to perform various functions such as processing, amplifying and selectively filtering electronic signals, controlling electronic system functions and processing, and transmitting and storing data. Our digital and mixed signal products are based on silicon wafers with CMOS transistors offering fast switching speeds and low power consumption, which are both critical design factors for the markets we serve. We also offer analog products, which are based on III-V semiconductor materials that have higher electrical conductivity than silicon, and thus tend to have better performance characteristics in radio frequency ("RF"), and optoelectronic applications. III-V refers to elements from the 3rd and 5th groups in the periodic table of chemical elements. Examples of these materials used in our products are gallium arsenide ("GaAs") and indium phosphide ("InP").

We provide semiconductor solutions for managing the movement of data in data center, telecom, enterprise and embedded networking applications. We provide a broad variety of RF semiconductor devices, wireless connectivity solutions and custom touch controllers for the wireless market. We also provide semiconductor solutions for enabling the set-top box and broadband access applications and for enabling secure movement of digital data to and from host machines, such as servers, personal computers and storage systems, to the underlying storage devices, such as hard disk drives and solid-state drives.

Our product portfolio ranges from discrete devices to complex sub-systems that include multiple device types and may also incorporate firmware for interfacing between analog and digital systems. In some cases, our products include mechanical hardware that interfaces with optoelectronic or capacitive sensors. We focus on markets that require high quality and the technology leadership and integrated performance characteristic of our products. The table below presents our material semiconductor product families and their major end markets and applications during fiscal year 2021.

Major End Markets	**Major Applications**	**Material Product Families**
Broadband	• Set-top Box ("STB") and Broadband Access	• STB SoCs • Cable, digital subscriber line ("DSL") and passive optical networking ("PON") central office/ consumer premise equipment ("CO/ CPE") SoCs • Wireless local area network ("WLAN") access point SoCs
Networking	• Data center, Telecom, Enterprise and Embedded Networking	• Ethernet switching and routing merchant silicon • Embedded processors and controllers • Serializer/Deserializer ("SerDes"), application specific integrated circuits ("ASICs") • Optical and copper, physical layer ("PHYs") • Fiber optic transmitter and receiver components
Wireless	• Mobile Handsets	• RF front end modules ("FEMs"), filters, power amplifiers • Wi-Fi, Bluetooth, global positioning system/global navigation satellite system ("GPS/GNSS") SoCs • Custom touch controllers
Storage	• Servers and Storage Systems	• Serial attached small computer system interface ("SAS") and redundant array of independent disks ("RAID") controllers and adapters • Peripheral component interconnect express ("PCIe") switches • Fibre channel host bus adapters ("HBA")
	• Hard Disk Drives ("HDD"); Solid-State Drives ("SSD")	• Read channel based SoCs; Custom flash controllers • Preamplifiers
Industrial	• Power isolation, conversion and protection	• Optocouplers
	• Factory automation, in-car infotainment and renewable energy systems	• Industrial fiber optics
	• Motor Controls and Factory Automation, In-car Infotainment Automation	• Motion control encoders and subsystems

Set-Top Box Solutions: We offer complete SoC platform solutions for cable, satellite, Internet Protocol television, over-the-top and terrestrial STBs. Our products enable global service providers to introduce new and enhanced technologies and services in STBs, including transcoding, digital video recording functionality, higher definition video processing, increased networking capabilities, and more tuners to enable faster channel change and more simultaneous recordings. We are also enabling service providers in deploying High Efficiency Video Coding ("HEVC"), a video compression format that is a successor to the H. 264/MPEG-4 format. HEVC enables ultra-high definition ("Ultra HD"), services by effectively doubling the capacity of existing networks to deploy new or existing content. Our families of STB solutions support the complete range of resolutions, from standard definition, to high definition, and Ultra HD.

Broadband Access Solutions: We offer complete SoC platform solutions for DSL, cable, PON and WLAN for both CPE and CO deployments. Our CPE devices are used in broadband modems, residential gateways and Wi-Fi access points and routers. Our CO devices, including DSL Access Multiplexer, cable modem termination systems and PON optical line termination medium access controller, are empowering modern operator broadband infrastructure. Our products enable global service providers to continue to deploy next generation broadband access technologies across multiple standards, including DOCSIS, G.Fast, data over cable service interface specification, PON and Wi-Fi to provide more bandwidth and faster speeds to consumers.

Ethernet Switching & Routing: Ethernet is a ubiquitous interconnection technology that enables high performance and cost effective networking infrastructure. We offer a broad set of Ethernet switching and routing products that are optimized for data center, service provider network, enterprise network, and embedded network applications. In the data center market, our high capacity, low latency, switching silicon supports advanced protocols around virtualization and multi-pathing. Our Ethernet switching fabric technologies provide the ability to build highly scalable flat networks supporting tens of thousands of servers. Our service provider switch portfolio enables carrier/service provider networks to support a large number of services in the wireless backhaul, access, aggregation and core of their networks. For enterprise networks and embedded Ethernet applications, we offer product families that combine multi-layer switching capabilities and support lower power modes that comply with industry standards around energy efficient Ethernet.

Embedded Processors & Controllers: Our embedded processors leverage our ARM central processing unit and Ethernet switching technology to deliver SoCs for high performance embedded applications in a wide range of communication products such as voice-over-internet-protocol, telephony, point-of-sale devices and enterprise and retail access points and gateways. We offer a range of knowledge-based processors to enable high-performance decision-making for packet processing in a variety of advanced devices in the enterprise, metro, access, edge and core networking spaces. We also offer a range of Ethernet controllers for servers and storage systems supporting multiple generations of Ethernet technology.

SerDes ASICs: For data center and enterprise networking, and high performance computing applications, we supply high speed SerDes technology integrated into ASICs. These ASICs are custom products built to individual customers specifications. Our ASICs are designed on advanced CMOS process technologies, focused primarily on leading edge geometries.

Physical Layer Devices: These devices, also referred to as PHYs, are transceivers that enable the reception and transmission of Ethernet data packets over a physical medium such as copper wire or optical fibers. Our high performance Ethernet transceivers are built upon a proprietary digital signal processing communication architecture optimized for high-speed network connections and support the latest standards and advanced features, such as energy efficient Ethernet, data encryption and time synchronization. We also offer a range of automotive Ethernet products to meet growing consumer demand for in-vehicle connectivity.

Fiber Optic Components: We supply a wide array of optical components to the Ethernet networking, storage, and access, metro- and long-haul telecommunication markets. Our optical components enable the high speed reception and transmission of data through optical fibers.

RF Semiconductor Devices: Our RF semiconductor devices selectively filter, as well as amplify, RF signals. Filters enable modern wireless communication systems to support a large number of subscribers simultaneously by ensuring that the multiple transmissions and receptions of voice and data streams do not interfere with each other. We were among the first to deliver commercial film bulk acoustic resonator (“FBAR”) filters that offer technological advantages over competing filter technologies, to allow mobile handsets to function more efficiently in today's congested RF spectrum. FBAR technology has a significant market share within the cellular handset market. Our RF products include FEMs that incorporate multiple die into multi-function RF devices, duplexers and multiplexers, which are a combination of two or more transmit and receive filters in a single device, using our proprietary FBAR technology, discrete filters and discrete power amplifiers.

Our expertise in FBAR technology, amplifier design, and module integration enables us to offer industry-leading performance in cellular RF transceiver applications. Our proprietary GaAs wafer manufacturing processes are critical to the production of power amplifier and low noise amplifier products.

Connectivity Solutions: Our connectivity solutions include discrete and integrated Wi-Fi and Bluetooth solutions, and satellite-based GPS/GNSS mobile navigation receivers.

Wi-Fi allows devices on a local area network to communicate wirelessly, adding the convenience of mobility to the utility of high-speed data networks. We offer a family of high performance, low power Wi-Fi chipsets. Bluetooth is a low power technology that enables direct connectivity between devices. We offer a complete family of Bluetooth silicon and software solutions that enable manufacturers to easily and cost-effectively add Bluetooth functionality to virtually any device. These solutions include combination chips that offer integrated Wi-Fi and Bluetooth functionality, which provides significant performance advantages over discrete solutions.

We also offer a family of GPS, assisted-GPS and GNSS semiconductor products, software and data services. These products are part of a broader location platform that leverages a broad range of communications technologies, including Wi-Fi, Bluetooth and GPS, to provide more accurate location and navigation capabilities.

Custom Touch Controllers: Our touch controllers process signals from touch screens in mobile handsets and tablets.

SAS, RAID & PCIe Products: We provide SAS and RAID controller and adapter solutions to server and storage system original equipment manufacturers (“OEMs”). These solutions enable secure and high speed data transmission between a host computer, such as a server, and storage peripheral devices, such as HDD, SSD and optical disk drives and disk and tape-based storage systems. Some of these solutions are delivered as stand-alone semiconductors, typically as a controller. Other solutions are delivered as circuit boards, known as adapter products, which incorporate our semiconductors onto a circuit board with other features. RAID technology is a critical part of our server storage connectivity solutions as it provides protection against the loss of critical data resulting from HDD failures.

We also provide interconnect semiconductors that support the PCI and PCIe communication standards. PCIe is the primary interconnection mechanism inside computing systems today.

Fibre Channel Products: We provide Fibre Channel HBAs, which connect host computers such as servers to FC SANs.

HDD & SSD Products: We provide read channel-based SoCs and preamplifiers to HDD OEMs. These are the critical chips required to read, write and protect data. An HDD SoC is an integrated circuit that combines the functionality of a read channel, serial interface, memory and a hard disk controller in a small, high-performance, low-power and cost-effective package. Read channels convert analog signals that are generated by reading the stored data on the physical media into digital signals. In addition, we sell preamplifiers, which are used to amplify the initial signal to and from the drive disk heads so the signal can be processed by the read channel.

We also provide custom flash controllers to SSD OEMs. An SSD stores data in flash memory instead of on a hard disk, providing high speed access to the data. Flash controllers manage the underlying flash memory in SSDs, performing critical functions such as reading and writing data to and from the flash memory and performing error correction, wear leveling and bad block management.

Industrial End Markets: We also provide a broad variety of products for the general industrial and automotive markets. We offer optocouplers, which provide electrical insulation and signal isolation for signaling systems that are susceptible to electrical noise or interference. Optocouplers are used in a diverse set of applications, including industrial motors, automotive systems including those used in hybrid engines, power generation and distribution systems, switching power supplies, motion sensors, telecommunications equipment, computers and office equipment, plasma displays, and military electronics. We also provide industrial fiber optics, Ethernet, motion encoders and LED products.

Infrastructure Software

Our mainframe software provides market-leading DevOps, AIOps, Security and Data Management Systems solutions. We help enterprises embrace open tools and technologies, integrate their mainframe into their cloud infrastructures, and increase the value of their mainframe investments. By partnering with our customers and providing creative value-added programs, we help customers overcome challenges related to skills development, technical education, strategy and planning, and the need for cloud-like pricing flexibility to support their overall business success with the platform.

Our distributed software solutions enable global enterprises to optimize the planning, development and delivery of software, powering their business critical digital services. Our solutions are designed to enable customers to innovate, improve customer experience, and drive profitability by aligning business, development, and operational teams. Our products, organized in the domains of ValueOps, DevOps, and AIOps, deliver end-to-end visibility across all stages of the digital lifecycle and help our customers realize better business outcomes and better experiences for their customers.

Our Symantec cyber security software solutions help organizations and governments secure against threats and compliance risks by protecting their users and data on any app, device, or network. Our integrated cyber defense approach simplifies cyber security with comprehensive solutions designed to secure critical business assets across on-premises and cloud infrastructures. Our Symantec solutions utilize rich threat intelligence from a global network of security engineers, threat analyst and researchers, as well as advanced AI and machine-learning engines, enabling customers to protect data, connect authorized users with trusted applications, and detect and respond to the most advanced targeted attacks.

We also offer mission critical FC SAN products designed to help customers reduce the cost and complexity of managing business information within a shared data storage environment, enabling high levels of availability of mission critical applications in the form of modules, switches and subsystems incorporating multiple semiconductor products. We deliver reliable and simplified management of these FC SAN products through our software-based management tools designed to maximize uptime, dramatically simplify storage area networking deployment and management, and provide high levels of visibility and insight into the storage network.

Table of Contents

The table below presents our software portfolios and their material offerings during fiscal year 2021.

Software Portfolio	Portfolio Description	Major Portfolio Offerings
Mainframe Software	• Solutions for DevOps, AIOps, Security and Database Management Systems	• Operational Analytics & management • Automation • Database & Database Management • Application Development & Testing • Identity & Access Management • Compliance & Data Protection • Security Insights
Distributed Software	• Solutions that optimize the planning, development and delivery of business critical services	• ValueOps • DevOps • AIOps
Symantec Cyber Security	• Comprehensive threat protection and compliance solutions that secure against threats and compliance risks by protecting users and data on any app, device, or network	• Endpoint Security • Network Security • Information Security • Identity Security
FC SAN Management	• Solutions that transforms current storage networks with autonomous SAN capabilities	• Fibre Channel switch
Payment Authentication	• Software designed to reduce Card Not Present	• Payment Security Suite

Operational Analytics & Management*:* These solutions combine big data, machine learning and artificial intelligence ("AI") with mainframe expertise to deliver meaningful and actionable insights to augment and automate day-to-day operations and deliver exceptional customer experiences.

Automation***:*** These solutions reduce manual effort by enabling customers to proactively optimize resources and orchestrate automation across enterprise applications and systems.

Databases & Database Management*:* These high-performance databases and management tools store, organize, and manage mainframe data to ensure optimal performance, efficient administration, and reliability of critical systems.

Application Development & Testing*:* These solutions enable customers to accelerate software delivery while increasing code quality through the use of our agile processes and tools, and DevOps solutions. Our open-first strategy helps customers modernize their mainframe environment through the use of open source and open application programming technologies across people, process, tooling and applications, resulting in greater synergy and alignment with their corporate information technology ("IT").

Identity & Access Management*:* These solutions manage mainframe access and elevate it with modern practices such as multi-factor authentication, managing access for privileged users, and supporting all external security managers.

Compliance & Data Protection*:* These solutions locate and protect sensitive mainframe data to ensure compliance and identify risk, identify and proactively respond to potential risks and bad actors, and reduce risk and lighten security management load with automated identification and authorization cleanup.

Security Insights Platform*:* This solution helps ensure a trusted environment for customers and their employees by quickly interpreting and assessing mainframe security posture, identifying risks and developing remediation steps on an ongoing and ad hoc basis. This data is available for use with in-house tools for security information and event management.

ValueOps*:* This solution delivers value stream management capabilities that enable customers to schedule, track, and manage work throughout its lifecycle from investment planning to execution. It aligns business and development teams across the enterprise, increasing transparency, reducing inefficiencies, and improving time to value.

DevOps: This solution offers capabilities that empower users of our agile processes and tools to track development progress and deploy releases confidently with assurance of feature completeness, high-quality and reduced risk. Key stakeholders have a single view of key insights into release progress, health, quality, and defect trends, and metrics that drive focus, gauge readiness, and help to ensure successful, quality releases.

AIOps: This solution combines application, infrastructure and network monitoring and correlation with intelligent remediation capabilities to help customers create more resilient production environments and improve customer experience.

Endpoint Security: Endpoints are the critical last line of defense against cyber attackers. Our Symantec endpoint security solutions prevent, detect and respond to emerging threats across all devices and operating systems including laptops, desktops, tablets, mobile phones, servers and cloud workloads through an intelligent AI driven security console and single agent.

Network Security: Email and web access are the lifeblood and essential communication means for every modern organization. We have a full array of network security solutions, as well as a shared set of advanced threat protection technologies to stop inbound and outbound threats targeting end users, information and key infrastructure.

Information Security: Information protection and compliance is critical to managing risk. We offer integrated information security solutions, based on an efficient, single-policy that can be applied across the entire environment, to help organizations identify and protect risky users, applications and their most sensitive data everywhere across endpoints, on-premises networks, cloud services and private applications.

Identity Security: User identities are under attack by cyber criminals hoping to exploit their access and privileges and do harm. We mitigate these attacks by enforcing granular security policies to stop unauthorized access to sensitive resources and data.

Fibre Channel Switch Products: Our Brocade Fibre Channel switch products provide interconnection, bandwidth and high-speed switching between servers and storage devices which are in a FC SAN. FC SANs are networks dedicated to mission critical storage traffic, and enable simultaneous high speed and secure connections among multiple host computers and multiple storage arrays.

Payment Security Suite: This is a software as a service ("SaaS")-based payment authentication service to help banks protect against fraud and ensure a hassle-free online shopping experience for their customers.

Research and Development

We are committed to continuous investment in product development and enhancement, with a focus on rapidly introducing new, proprietary products and releases. Many of our products have grown out of our own research and development efforts, and have given us competitive advantages in certain target markets due to performance differentiation. However, we opportunistically seek to enhance our capabilities through the acquisition of engineers with complementary research and development skills and complementary technologies and businesses. We focus our research and development efforts on the development of mission critical, innovative, sustainable and higher value product platforms and those that improve the quality and stability in our broadly deployed products. We leverage our design capabilities in markets where we believe our innovation and reputation will allow us to earn attractive margins by developing high value-add products.

We plan to continue investing in product development, both organically and through acquisitions, to drive growth in our business. We also invest in process development and improvements to product features and functions, as well as fabrication capabilities to optimize processes for devices that are manufactured internally. Our field application engineers, design engineers, and product and software development engineers are located in many places around the world, and in many cases near our top customers. This enhances our customer reach and our visibility into new product opportunities and, in the case of our semiconductor customers, enables us to support our customers in each stage of their product development cycle, from the early stages of production design to volume manufacturing and future growth. By collaborating with our customers, we have opportunities to develop high value-added, customized products for them that leverage our existing technologies. We anticipate that we will continue to make significant research and development expenditures in order to maintain our competitive position, and to ensure a continuous flow of innovative and sustainable product platforms.

Customers, Sales and Distribution

We sell our products through our direct sales force and a select network of distributors and channel partners globally. Distributors and OEMs, or their contract manufacturers, typically account for the substantial majority of our semiconductor sales. A relatively small number of customers account for a significant portion of our net revenue. Sales to distributors accounted for 53% and 42% of our net revenue for fiscal years 2021 and 2020, respectively. We believe aggregate sales to our top five end customers, through all channels, accounted for more than 35% and 30% of our net revenue for each of our fiscal years 2021 and 2020, respectively. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 20% and 15% of our net revenue for fiscal years 2021 and 2020, respectively. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

Many of our semiconductor customers design products in North America or Europe that are then manufactured in Asia. To serve customers around the world, we have strategically developed relationships with large global electronic component distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges. We also sell our products to a wide variety of OEMs or their contract manufacturers. We have established strong relationships with leading OEM customers across multiple target markets. Our direct sales force focuses on supporting our large OEM customers, and has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer’s organization. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers. Many of our major customer relationships have been in place for many years and are often the result of years of collaborative product development. This has enabled us to build our extensive IP portfolio and develop critical expertise regarding our customers’ requirements, including substantial system-level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. Many of our customers and their contract manufacturers often require time critical delivery of our products to multiple locations around the world. With sales offices located in various countries, our primary warehouse in Malaysia, and dedicated regional customer support call centers, where we address customer issues and handle logistics and other order fulfillment requirements, we believe we are well-positioned to support our customers throughout the design, technology transfer and manufacturing stages across all geographies.

Our software customers are in most major industries worldwide, including banks, insurance companies, other financial services providers, government agencies, global IT service providers, telecommunication providers, transportation companies, manufacturers, technology companies, retailers, educational organizations and health care institutions. Our customers generally consist of large enterprises that have computing environments from multiple vendors and are highly complex. We remain focused on strengthening relationships and increasing penetration within our existing core, mainframe-centric, and Symantec endpoint customers and expanding the adoption of our enterprise software offerings with these customers. We believe our enterprise-wide license model will continue to offer our customers reduced complexity, more flexibility and an easier renewal process that will help drive revenue growth.

Manufacturing Operations

We focus on maintaining an efficient global supply chain and a variable, low-cost operating model. Accordingly, we outsource a majority of our manufacturing operations, utilizing third-party foundry and assembly and test capabilities, as well as some of our corporate infrastructure functions. The majority of our front-end wafer manufacturing operations is outsourced to external foundries, including Taiwan Semiconductor Manufacturing Company Limited (“TSMC”). We use third-party contract manufacturers for a significant majority of our assembly and test operations, including Advanced Semiconductor Engineering, Inc., Foxconn Technology Group, Amkor Technology, Inc. and Siliconware Precision Industries Co., Ltd. We use our internal fabrication facilities for products utilizing our innovative and proprietary processes, such as our FBAR filters for wireless communications and our vertical-cavity surface emitting laser and side emitting lasers-based on GaAs and InP lasers for fiber optic communications, while outsourcing commodity processes such as standard CMOS. By doing so, we can protect our IP and accelerate time to market for our products. The majority of our internal III-V semiconductor wafer fabrication is done in the U.S. and Singapore.

We also have a long history of operating in Asia where we manufacture and source the majority of our products and materials. We store the majority of our product inventory in our warehouse in Malaysia and our presence in Asia places us in close proximity to many of our customers’ manufacturing facilities.

Manufacturing Materials and Suppliers

Our manufacturing operations employ a wide variety of semiconductors, electromechanical components and assemblies and raw materials. We purchase materials from hundreds of suppliers on a global basis. These purchases are generally on a purchase order basis and some parts are not readily available from alternate suppliers due to their unique design or the length of time and cost necessary for re-design or qualification. To address the potential disruption in our supply chain, we may use a number of techniques, including redesigning products for alternative components, making incremental or “lifetime” purchases, or qualifying more than one source of supply. Our long-term relationships with our suppliers allow us to proactively manage our technology development and product discontinuance plans, and to monitor our suppliers' financial health. Some suppliers may, nonetheless, extend their lead times, limit supplies, increase prices or cease to produce necessary parts for our products. If these are unique or highly specialized components, we may not be able to find a substitute quickly, or at all.

Competition

The markets in which we participate are highly competitive. Our competitors range from large, international companies offering a wide range of products to smaller companies specializing in narrow markets. The competitive landscape is changing as a result of a trend toward consolidation within many industries, as some of our competitors have merged with or been acquired by other competitors, while others have begun collaborating with each other. We expect this consolidation trend to continue. We expect competition in the markets in which we participate to continue to increase as existing competitors improve or expand their product offerings and as new companies enter the market. Additionally, our ability to compete effectively depends on a number of factors, including: quality, technical performance, price, product features, product system compatibility, system-level design capability, engineering expertise, responsiveness to customers, new product innovation, product availability, delivery timing and reliability, and customer sales and technical support.

In the semiconductor market, we compete with integrated device manufacturers, fabless semiconductor companies, as well as the internal resources of large, integrated OEMs. Our primary competitors are Amlogic Inc., Analog Devices, Inc., Advanced Micro Devices, Inc., Cisco Systems, Inc., Cree, Inc., GlobalFoundries, Hamamatsu Photonics K.K., Heidenhain Corporation, HiSilicon Technologies Co. Ltd., iC-Haus Gmbh, Intel Corp., Lumentum Holdings Inc., MACOM Technology Solutions Holdings, Inc., MaxLinear, Inc., Marvell Technology Inc., Mediatek Inc., NVIDIA Corporation, Microchip Technology Incorporated, Mitsubishi Electric Corporation, Murata Manufacturing Co., Ltd., NXP Semiconductors N.V., ON Semiconductor Corporation, OSRAM, Qorvo, Inc., Qualcomm Inc., Realtek Semiconductor Corp., Renesas Electronics Corporation, Skyworks Solutions, Inc., ST Microelectronics N.V., Sumitomo Corporation, Synaptics Incorporated, TDK-EPC Corporation, Toshiba Corporation, Texas Instruments, Inc. and II-VI Incorporated. We compete based on the strength and expertise of our high speed proprietary design expertise, FBAR technology, amplifier design, module integration, proprietary materials processes, multiple storage protocols and mixed-signal design, our broad product portfolio, support of key industry standards, reputation for quality products, and our customer relationships.

In the infrastructure software market, we compete with large enterprise software vendors who continue to expand their product and service offerings and consolidate offerings into broad product lines, and smaller, niche players focused on specific markets. Our primary competitors are Atlassian Corporation, Plc, BMC Software Inc., BeyondTrust Corporation, Cisco Systems, Inc., CrowdStrike Holdings, Inc., CyberArk Software, Ltd., International Business Machines Corporation, Micro Focus International Plc, Microsoft Corporation, New Relic, Inc., Oracle Corporation, Proofpoint, Inc., Rocket Software, Inc., SailPoint, Inc., Salesforce.com, Inc., ServiceNow, Inc., SolarWinds, Inc., Splunk, Inc. and Zscaler, Inc. We compete based on our breadth of portfolio of enterprise management tools, breadth and synergy of offerings, our platform and hardware independence, our global reach, and our deep customer relationships and industry experience.

Intellectual Property

Our success depends in part upon our ability to protect our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks, service marks, trade secrets and similar IP, as well as customary contractual protections with our customers, suppliers, employees and consultants, and through security measures to protect our trade secrets. We believe our current product expertise, key engineering talent and IP portfolio provide us with a strong platform from which to develop application specific products in key target markets.

As of October 31, 2021, we had 19,170 U.S. and other patents and 511 U.S. and other pending patent applications. The expiration dates of our patents range from 2020 to 2039, with a small number of patents expiring in the near future, none of which are expected to be material to our IP portfolio. We are not substantially dependent on any single patent or group of related patents.

We focus our patent application program to a greater extent on those inventions and improvements that we believe are likely to be incorporated into our products, as contrasted with more basic research. However, we do not know how many of our pending patent applications will result in the issuance of patents or the extent to which the examination process could require us to narrow our claims.

We and our predecessors have also entered into a variety of IP licensing and cross-licensing arrangements that have both benefited our business and enabled some of our competitors. A portion of our revenue comes from IP licensing royalty payments and from litigation settlements relating to such IP. We also license third-party technologies that are incorporated into some elements of our design activities, products and manufacturing processes. Historically, licenses of the third-party technologies used by us have generally been available to us on acceptable terms.

The industries in which we compete are characterized by the existence of a large number of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including by patent holding companies that do not make or sell products. Some of our customer agreements require us to indemnify our customers for third-party IP infringement claims arising from our products. Claims of this sort could harm our relationships with our customers and might deter future customers from doing business with us. With respect to any IP rights claims against us or our customers or distributors, we may be required to defend ourselves or our customers or distributors in litigation, cease manufacture the infringing products, pay damages, expend resources to develop non-infringing technology, seek a license which may not be available on commercially reasonable terms or at all, or relinquish patents or other IP rights.

With respect to our infrastructure software, the proprietary portions of our source code for our products are protected both as a trade secret and as copyrighted works. Except with respect to software components that are subject to open source licenses, our customers do not generally have access to the source code for our products. Rather, on-premise customers typically access only the executable code for our products, and SaaS customers access only the functionality of our SaaS offerings. Under certain contingent circumstances, some of our customers are beneficiaries of a source code escrow arrangement that would enables them to obtain a limited right to access and use our source code if specific conditions are met.

Employees

Our success depends on our continued ability to attract, motivate and retain our workforce. As the source of our technological and product innovations, our engineering and technical personnel are a significant asset. Competition for these and other talented employees is significant in many locations where we operate, such as Silicon Valley and Southeast Asia.

We measure our employees' engagement by our voluntary attrition rate and employee feedback. Our global voluntary attrition rate in fiscal year 2021 was approximately 7%, below the technology industry benchmark (AON, 2021 Salary Increase and Turnover Study — Second Edition, September 2021).

We also track the portion of our workforce in research and development roles. As of October 31, 2021, we had approximately 20,000 employees worldwide, with approximately 63% in research and development roles. By geography, approximately 54% of our employees are located in North America, 35% in Asia, and 11% in Europe, the Middle East and Africa.

Governmental Regulation

Our semiconductor manufacturing operations and research and development involve the use of hazardous substances and are regulated under international, federal, state and local laws governing health, safety and the environment. These regulations include limitations on discharge of pollutants to air, water, and soil; remediation requirements; product chemical content limitations; manufacturing chemical use and handling restrictions; pollution control requirements; waste minimization considerations; and treatment, transport, storage and disposal of solid and hazardous wastes. We are also subject to regulation by the U.S. Occupational Safety and Health Administration and similar health and safety laws in other jurisdictions.

We believe that our properties and operations at our facilities comply in all material respects with applicable environmental laws and worker health and safety laws. However, the risk of environmental liabilities cannot be completely eliminated and there can be no assurance that the application of environmental, health and safety laws to our business will not require us to incur significant expenditures.

We are also regulated under a number of international, federal, state and local laws regarding recycling, product packaging and product content requirements, including legislation enacted in the U.S., European Union and China, among a growing number of jurisdictions, which have placed greater restrictions on the use of lead, among other substances, in electronic products, which affects materials composition and semiconductor packaging. In addition, our business is subject to various import/export regulations, such as the U.S. Export Administration Regulations, and applicable executive orders, and rules of industrial standards bodies, like the International Standards Organization, as well as regulation by other agencies, such as the U.S. Federal Trade Commission ("FTC"). These laws, regulations and orders are complex, may change frequently and with limited notice, have generally and may continue to become more stringent over time. We may incur significant expenditures in future periods as a result.

Seasonality

Historically, our net revenue has typically been higher in the second half of the fiscal year than in the first half, primarily due to seasonality in our wireless communications products. These products have historically experienced seasonality due to launches of new mobile handsets manufactured by our OEM customers. However, from time to time, typical seasonality and industry cyclicality are overshadowed by other factors such as wider macroeconomic effects, the timing of significant product transitions and launches by large

OEMs, particularly with our wireless communications products. We have a diversified business portfolio and we believe that our overall revenue is less susceptible to seasonal variations as a result of this diversification.

Other Information

Our website is www.broadcom.com. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and other reports (and amendments thereto) filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act") with the Securities and Exchange Commission (the "SEC"), as well as proxy statements filed by Broadcom, free of charge at the "Investor Center - SEC Filings" section of our website at www.broadcom.com, as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Such periodic reports, proxy statements and other information are also available at the SEC's website at http://www.sec.gov. The reference to our website address does not constitute incorporation by reference of the information contained on or accessible through our website.

Information About Our Executive Officers

The following table provides information regarding our executive officers as of December 17, 2021:

Name and Title	Age	Position and Offices
Hock E. Tan	70	President, Chief Executive Officer and Director
Kirsten M. Spears	57	Chief Financial Officer and Chief Accounting Officer
Mark D. Brazeal	53	Chief Legal and Corporate Affairs Officer
Charlie B. Kawwas, Ph.D.	51	Chief Operating Officer
Thomas H. Krause, Jr.	44	President, Broadcom Software Group

Hock E. Tan has served as our President and Chief Executive Officer since March 2006. He was President and Chief Executive Officer at Integrated Circuit Systems, Inc., a publicly traded timing solutions IC company, from 1999 until its acquisition by Integrated Device Technology, Inc. in 2005, Chief Operating Officer from 1996 to 1999 and Senior Vice President and Chief Financial Officer from 1995 to 1999. He was Vice President of Finance at Commodore International, Ltd. from 1992 to 1994, and held senior management positions at PepsiCo, Inc. and General Motors Corporation. He was also managing director of Pacven Investment, Ltd., a venture capital fund in Singapore, from 1988 to 1992, and was managing director of Hume Industries Ltd. in Malaysia from 1983 to 1988.

Kirsten M. Spears has served as our Chief Financial Officer and Chief Accounting Officer since December 2020. She served as our Principal Accounting Officer from March 2016 to December 2020 and Vice President and Corporate Controller from May 2014 to December 2020. She was Vice President and Corporate Controller at LSI Corporation from 2007 until its acquisition by us in 2014. She held several management positions in accounting and reporting at LSI from 1997 to 2007. She also worked for PriceWaterhouseCoopers prior to joining LSI.

Mark D. Brazeal has served as our Chief Legal and Corporate Affairs Officer since December 2021. He served as our Chief Legal Officer from March 2017 to December 2021. He was Chief Legal Officer and Senior Vice President, IP Licensing for SanDisk Corporation from 2014 until its acquisition by Western Digital Corporation in 2016. He held several senior legal positions at Broadcom Corporation from 2000 to 2014, most recently as the Senior Vice President and Senior Deputy General Counsel in charge of all commercial, operational, IP licensing and litigation matters. He was also an attorney in the transactional and IP groups at the law firms of Wilson Sonsini Goodrich & Rosati, Yuasa & Hara and Howrey & Simon prior to joining Broadcom Corporation.

Charlie B. Kawwas has served as our Chief Operating Officer since December 2020. He served as our Senior Vice President and Chief Sales Officer from June 2015 to December 2020 and Senior Vice President, Worldwide Sales from May 2014 to June 2015. He was head of worldwide sales at LSI Corporation from 2010 until its acquisition by us in 2014. He held several executive leadership positions at LSI from 2007 to 2010, including Vice President of Sales and Marketing for the networking division and Vice President of Marketing for the networking and storage products group. He was also the leader of Product Line Management for the Optical Ethernet and Multi-service Edge portfolio at Nortel Networks Corporation prior to joining LSI.

Thomas H. Krause, Jr. has served as our President, Broadcom Software Group since December 2020. He served as our Chief Financial Officer from October 2016 to December 2020, Vice President and acting Chief Financial Officer from March 2016 to October 2016 and

Vice President of Corporate Development from January 2012 to March 2016. He founded a financial advisory firm where he represented public and private technology companies from 2010 to 2012. He was Vice President of Business Development at Techwell, Inc. from 2007 until its acquisition by Intersil Corporation in 2010. He also held several roles at Technology Crossover Ventures and Robertson Stephens prior to joining Techwell.

ITEM 1A. RISK FACTORS

Our business, operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock and preferred stock. Many of the following risks and uncertainties are, and will continue to be, exacerbated by the COVID-19 pandemic and any worsening of the global business and economic environment as a result. The following material factors, among others, could cause our actual results to differ materially from historical results and those expressed in forward-looking statements made by us or on our behalf in filings with the SEC, press releases, communications with investors and oral statements.

Risk Factors Summary

The following is a summary of the principal risks that could adversely affect our business, operations and financial results.

Risks Related to Our Business

- The ongoing COVID-19 pandemic has disrupted and will likely continue to disrupt normal business activity.
- The majority of our sales come from a small number of customers and a reduction in demand or loss of one or more of our significant customers may adversely affect our business.
- Dependence on contract manufacturing and suppliers of critical components within our supply chain may adversely affect our ability to bring products to market.
- We purchase a significant amount of the materials used in our products from a limited number of suppliers.
- Our business is subject to various governmental regulations and trade restrictions. Compliance with these regulations may cause us to incur significant expense and, if we fail to maintain compliance, we may be forced to cease manufacture and distribution of certain products or subjected to administrative proceedings and civil or criminal penalties.
- Adverse global economic conditions could have a negative effect on us.
- We operate in the highly cyclical semiconductor industry.
- Global political and economic conditions and other factors related to our international operations could adversely affect us.
- We are subject to risks associated with our distributors and other channel partners, including product inventory levels and product sell-through.
- Our dependence on senior management and if we are unable to attract and retain qualified personnel, we may not be able to execute our business strategy effectively.
- We may pursue acquisitions, investments, joint ventures and dispositions, which could adversely affect our results of operations.
- We may be involved in legal proceedings, including IP, securities litigation, and employee-related claims.
- Our operating results are subject to substantial quarterly and annual fluctuations.
- Failure to adjust our manufacturing and supply chain to accurately meet customer demand could adversely affect our results of operations.
- Winning business in the semiconductor solutions industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.
- Competition in our industries could prevent us from growing our revenue.

- A prolonged disruption of our manufacturing facilities, research and development facilities, warehouses or other significant operations, or those of our suppliers, could have a material adverse effect on us.
- We may be unable to maintain appropriate manufacturing capacity or product yields at our own manufacturing facilities.
- Any failure of our IT systems or one or more of our corporate infrastructure vendors to provide necessary services could have a material adverse effect on our business.
- Our ability to maintain or improve gross margin.
- Our ability to protect the significant amount of IP in our business.
- Incompatibility of our software products with operating environments, platforms, or third-party products, demand for our products and services could decrease.
- Failure to enter into software license agreements on a satisfactory basis could adversely affect us.

- Licensed third party software used in our products may not be available to us in the future, which may delay product development and production or cause us to incur additional expense.
- Use of open source code sources, which, under certain circumstances could materially adversely affect us.
- We are subject to warranty claims, product recalls and product liability.
- The complexity of our products could result in unforeseen delays or expense or undetected defects or bugs.
- We make substantial investments in research and development and unsuccessful investments could materially adversely affect our business, financial condition and results of operations.
- We collect, use, store, or otherwise process personal information, which subjects us to privacy and data security laws and contractual commitments, and our actual or perceived failure to comply with such laws and commitments could harm our business.
- We are subject to environmental, health and safety laws, which could increase our costs, restrict our operations and require expenditures.
- Social and environmental responsibility regulations, policies and provisions, as well as customer and investor demands, may make our supply chain more complex and may adversely affect our relationships with customers and investors.
- The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future.
- A breach of our security systems may have a material adverse effect on our business.
- Fluctuations in foreign exchange rates could result in losses.

Risks Relating to Taxes

- Changes in tax legislation or policies could materially impact our financial position and results of operations.
- Our corporate income taxes could significantly increase if we are unable to maintain our tax concessions or if our assumptions and interpretations regarding tax laws and concessions prove to be incorrect.
- Our income taxes and overall cash tax costs are affected by a number of factors that could materially, adversely affect financial results.

Risks Relating to Our Indebtedness

- Our substantial indebtedness could adversely affect our financial health and our ability to execute our business strategy.
- The instruments governing our indebtedness impose certain restrictions on our business.
- Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flows from our business to pay our substantial debt.

Risks Relating to Owning Our Common Stock

- Volatility of our stock price could result in substantial losses for our investors as well as class action litigation against us and our management.
- The amount and frequency of our stock repurchases may fluctuate.
- A substantial amount of our stock is held by a small number of large investors.
- There can be no assurance that we will continue to declare cash dividends.

For a more complete discussion of the material risks facing our business, see below.

Risks Related to Our Business

The ongoing COVID-19 pandemic has disrupted and will likely continue to disrupt normal business activity, which may have an adverse effect on our results of operations.

The global spread of COVID-19 and the efforts to control it have disrupted, and reduced the efficiency of, normal business activities in much of the world. The pandemic has resulted in authorities around the world implementing numerous unprecedented measures such as travel restrictions, quarantines, shelter in place orders, factory and office shutdowns and vaccine mandates. These measures have impacted, and will likely continue to impact our workforce and operations, and those of our customers, contract manufacturers ("CMs"), suppliers and logistics providers.

We have been, and expect to continue, experiencing some disruption to parts of our global semiconductor supply chain, including procuring necessary components and inputs, such as wafers and substrates, in a timely fashion, with suppliers increasing lead times or placing products on allocation and raising prices. In addition, our primary warehouse and a number of our key suppliers, particularly assembly and test service providers, are in Malaysia. While our Malaysia warehouse has remained fully operational, many of the facilities of our key suppliers and other service providers were shut down or operated at reduced capacity for extended periods. This resulted in significant logistical challenges and product delays, which could recur in the event of any future closures of, or periods of reduced operations at, our warehouse or the facilities of our suppliers and providers. Any similar disruption at our Fort Collins, Colorado manufacturing facility would severely impact our ability to manufacture our FBAR products and adversely affect our wireless business. In addition, disruptions to commercial transportation infrastructure have increased delivery times for materials and components to our facilities, transfers of our products to our key suppliers and, in some cases, our ability to timely ship our products to customers. As a result of these supply chain disruptions, we have increased customer order lead times and placed some products on allocation. We are also largely building semiconductor products to order as demand continues to outpace supply. This has limited and may continue to limit our ability to fulfill orders and satisfy all of the demand for our products, which may adversely affect our relationships with our customers.

In response to governmental directives and recommended safety measures, we modified our workplace practices globally, which has resulted in many of our employees working remotely for extended periods of time. Working remotely for extended periods may reduce our employees’ efficiency and productivity, which may cause product development delays, hamper new product innovation and have other unforeseen adverse effects on our business. In addition, if a significant number of our employees, or employees and third parties performing key functions, including our Chief Executive Officer and members of our board of directors, become ill, our business may be further adversely impacted. While we have implemented personal safety measures at all of our facilities where our employees are working onsite, we may need to modify our business practices and policies in a manner that may adversely impact our business, especially if the spread of COVID-19 (including any variants) worsen significantly, and existing and new precautionary measures could negatively impact our operations. In addition, any actions we take may not be sufficient to mitigate the risk of infection and could result in a significant number of COVID-19-related claims. Changes to state workers’ compensation laws, such as those in California, may increase our potential liability for such claims.

While we continue to see robust demand in our semiconductor solutions segment and record profitability driven by the supply imbalance, and have seen little impact to our software business from the COVID-19 pandemic, the macroeconomic environment remains uncertain and it may not be sustainable over the longer term. The degree to which the pandemic ultimately impacts our business and results of operations will depend on future developments beyond our control, including the extent of actions to contain the virus (including any variants), availability and efficacy of the vaccines or other treatments, public acceptance of the vaccines (including boosters), and how quickly and to what extent normal economic and operating conditions resume.

The majority of our sales come from a small number of customers and a reduction in demand or loss of one or more of our significant customers may adversely affect our business.

We are dependent on a small number of end customers, OEMs, their respective CMs, and certain distributors for a majority of our business, revenue and results of operations. For fiscal year 2021, sales to distributors accounted for 53% of our net revenue. We believe aggregate sales, through all channels, to Apple and our top five end customers, accounted for approximately 20% and more than 35% of our net revenue for fiscal year 2021, respectively. This customer concentration increases the risk of quarterly fluctuations in our operating results and our sensitivity to any material, adverse developments experienced by our significant customers.

The terms and conditions under which we do business with most of our semiconductor customers generally do not include commitments to purchase any specific quantities of products. Even in those instances where we have an arrangement under which a customer agrees to source an agreed portion of its product needs from us (provided we meet our contractual obligations), the arrangement often includes pricing schedules or methodologies that apply regardless of the volume of products purchased, and those customers may not purchase the amount of product we expect. As a result, we may not generate the amount of revenue or achieve the level of profitability we expect under such arrangements. Moreover, our top customers' purchasing power has, in some cases, given them the ability to make greater demands on us with regard to pricing and contractual terms in general. We expect this trend to continue, which may adversely affect our gross margin on certain products and, should we fail to perform under these arrangements, we could also be liable for significant monetary damages.

The loss of, or any substantial reduction in sales to, any of our major customers could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Dependence on contract manufacturing and suppliers of critical components within our supply chain may adversely affect our ability to bring products to market, damage our reputation and adversely affect our results of operations.

We operate a primarily outsourced manufacturing business model that principally utilizes CMs, such as third-party wafer foundries and module assembly and test capabilities. Our semiconductor products require wafer manufacturers with state-of-the-art fabrication equipment and techniques, and most of our products are designed to be manufactured in a specific process, typically at one particular fab or foundry, either our own or with a particular CM.

We depend on our CMs to allocate sufficient manufacturing capacity to meet our needs, to produce products of acceptable quality at acceptable yields, and to deliver those products to us on a timely basis. We do not generally have long-term capacity commitments with our CMs and substantially all of our manufacturing services are on a purchase order basis with no minimum quantities. Further, our CMs may fail to timely develop new, advanced manufacturing processes, including transitions to smaller geometry process technologies or, from time to time, will cease to, or will become unable to, manufacture a component for us. As lead times to identify, qualify and establish reliable production at acceptable yields with a new CM is typically lengthy, there is often no readily available alternative source and there may be other constraints on our ability to change CMs. In addition, qualifying such CMs is often expensive, and they may not produce products as cost-effectively as our current suppliers.

TSMC, one of our CMs, manufactured approximately 89% of the wafers manufactured by our CMs during fiscal year 2021. Our wafer requirements represent a significant portion of the total production capacity of TSMC. However, TSMC also fabricates wafers for other companies, including certain of our competitors, and could choose or be required to prioritize capacity for other customers or reduce or eliminate deliveries to us on short notice. In addition, TSMC has, and may in the future, raise their prices to us.

If any of the foregoing circumstances occur, we may be unable to meet our customer demand, or to the same extent as our competitors, fail to meet our contractual obligations or forgo revenue opportunities. This has in the past damaged, and may in the future damage, our relationships with our customers. This could also result in litigation for alleged failure to meet our obligations, payment of significant damages, and our net revenue could decline, adversely affecting our business, financial condition, results of operations, and gross margin.

Further, any substantial disruption in the contract manufacturing services that we utilize, including TSMC’s supply of wafers to us, as a result of a natural disaster, climate change, water shortages, political unrest, military conflicts, geopolitical turmoil, trade tensions, government orders, medical epidemics, such as the COVID-19 pandemic, economic instability, equipment failure or other cause, could materially harm our business, customer relationships and results of operations.

We purchase a significant amount of the materials used in our products from a limited number of suppliers.

Our manufacturing processes and those of our CMs rely on many materials, including silicon, GaAs and InP wafers, copper lead frames, precious and rare earth metals, mold compound, ceramic packages and various chemicals and gases. We purchase a significant portion of our materials, components and finished goods used in our products from a few materials providers, some of which are single source suppliers. As certain materials are highly specialized, the lead time needed to identify and qualify a new supplier is typically lengthy and there is often no readily available alternative source. During fiscal year 2021, we purchased approximately two-thirds of our manufacturing materials from five materials providers. We do not generally have long-term contracts with our materials providers and substantially all of our purchases are on a purchase order basis. Suppliers may extend lead times, limit supplies, place products on allocation or increase prices due to commodity price increases, capacity constraints, inflation, or other factors, any of which could lead to interruption of supply or increased demand in the industry. For example, due to the COVID-19 pandemic, we have experienced some supply constraints and increases in prices, including with respect to wafers and substrates. Additionally, the supply of these materials may be negatively impacted by increased trade tensions between the U.S. and its trading partners, particularly China. These supply constraints have had, and may continue to have, a negative impact on our customer relationships. Further, continued supply constraints for these or any other reasons could result in loss of revenue opportunities and adversely impact our business, financial condition and results of operations.

Our business is subject to various governmental regulations, and compliance with these regulations may cause us to incur significant expense. If we fail to maintain compliance with applicable regulations, we may be forced to cease the manufacture and distribution of certain products, and we could be subject to administrative proceedings and civil or criminal penalties.

Our business is subject to various domestic and international laws and other legal requirements, including anti-competition and import/export regulations, such as the U.S. Export Administration Regulations, and applicable executive orders. These laws, regulations and orders are complex, may change frequently and with limited notice, have generally and may continue to become more stringent over time. We may be required to incur significant expense to comply with, or to remedy violations of, these regulations. In addition, if our customers fail to comply with these regulations, we may be required to suspend sales to these customers, which could damage our reputation and negatively impact our results of operations. The U.S. government may also add companies to its restricted entity list and/or technologies to its list of prohibited exports to specific countries, which have had and will continue to have an adverse effect on our ability to sell our products and our revenue. For example, Huawei Technologies Co., Ltd., one of our customers, is subject to certain U.S. export restrictions, which has required us to suspend sales to Huawei until we obtain licenses from the U.S. Department of Commerce. We may be unable to obtain or maintain the necessary licenses to allow us to export products to them. These restrictive governmental actions and any similar measures that may be imposed on U.S. companies by other governments, especially in light of ongoing trade tensions with China, will likely limit or prevent us from doing business with certain of our customers or suppliers and harm our ability to compete effectively or otherwise negatively affect our ability to sell our products, and adversely affect our business and results of operations.

Our products and operations are also subject to regulation by U.S. and non-U.S. regulatory agencies, such as the U.S. Federal Trade Commission ("FTC"). From time to time, we may also be involved or required to participate in regulatory investigations or inquiries, such as the ongoing investigation by the Korean Fair Trade Commission into certain of our contracting and business practices, which may evolve into legal or other administrative proceedings. Growing public concern over concentration of economic power in corporations is likely to result in increased anti-competition legislation, regulation, administrative rule making, and enforcement activity. Involvement in regulatory investigations or inquiries, can be costly, lengthy, complex and time consuming, diverting the attention and energies of our management and technical personnel.

If any pending or future governmental investigations result in an unfavorable resolution, we could be required to cease the manufacture and sale of the subject products or technology, pay fines or disgorge profits or other payments, and/or cease certain conduct and/or modify our contracting or business practices, which could have a material adverse effect on our business, financial condition and results of operations. We may be obligated to indemnify our current or former directors or employees, or former directors or employees of companies that we have acquired, in connection with regulatory investigations. These liabilities could be substantial and may include, among other things, the cost of government, law enforcement or regulatory investigations and civil or criminal fines and penalties.

In addition, the manufacture and distribution of our semiconductors must comply with various laws and adapt to changes in regulatory requirements as they occur. For example, if a country in which our products are manufactured or sold sets technical standards that are not widely shared, it may require us to stop distributing our products commercially until they comply with such new standards, lead certain of our customers to suspend imports of their products into that country, require manufacturers in that country to manufacture products with different technical standards and disrupt cross-border manufacturing relationships, any of which could have a material adverse effect on our business, financial condition and results of operations. If we fail to comply with these requirements, we could also be required to pay civil penalties or face criminal prosecution.

Adverse global economic conditions could have a negative effect on our business, results of operations and financial condition and liquidity.

A general slowdown in the global economy or in a particular region or industry, an increase in trade tensions with U.S. trading partners, inflation or a tightening of the credit markets could negatively impact our business, financial condition and liquidity. Adverse global economic conditions have from time to time caused or exacerbated significant slowdowns in the industries and markets in which we operate, which have adversely affected our business and results of operations. Macroeconomic weakness and uncertainty also make it more difficult for us to accurately forecast revenue, gross margin and expenses, and may make it more difficult to raise or refinance debt. An escalation of trade tensions between the U.S. and China has resulted in trade restrictions and increased tariffs that harm our ability to participate in Chinese markets or compete effectively with Chinese companies. Sustained uncertainty about, or worsening of, current global economic conditions and further escalation of trade tensions between the U.S. and its trading partners, especially China, and possible decoupling of the U.S. and China economies, could result in a global economic slowdown and long-term changes to global trade. Such events may also (i) cause our customers and consumers to reduce, delay or forgo technology spending, (ii) result in customers sourcing products from other suppliers not subject to such restrictions or tariffs, (iii) lead to the insolvency or consolidation of key suppliers and customers, and (iv) intensify pricing pressures. Any or all of these factors could negatively affect demand for our products and our business, financial condition and results of operations.

We operate in the highly cyclical semiconductor industry.

The semiconductor industry is highly cyclical and is characterized by constant and rapid technological change and price erosion, evolving technical standards, frequent new product introductions, short product life cycles (for semiconductors and for many of the end products in which they are used) and wide 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 industry in general, and in our business in particular. The industry has experienced a significant upturn due to the supply imbalance resulting in record profitability and increases in average selling prices, which may not be sustainable in the longer term.

Conversely, periods of industry downturns have been characterized by diminished demand for end-user products, high inventory levels and periods of inventory adjustment, under-utilization of manufacturing capacity, changes in revenue mix and accelerated 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 industry or market downturns, our net revenue may decline and our financial condition and results of operations may suffer.

Global political and economic conditions and other factors related to our international operations could adversely affect our business, financial condition and results of operations.

A majority of our products are produced, sourced and sold internationally and our international revenue represents a significant percentage of our overall revenue. In addition, as of October 31, 2021, approximately 48% of our employees were located outside the U.S. Multiple factors relating to our international operations and to particular countries in which we operate could have a material adverse effect on our business, financial condition and results of operations. These factors include:

- changes in political, regulatory, legal or economic conditions or geopolitical turmoil, including terrorism, war or political or military coups, or civil disturbances or political instability foreign and domestic;
- restrictive governmental actions, such as restrictions on the transfer or repatriation of funds and foreign investments, data privacy regulations, imposition of climate change regulations, and trade protection measures, including increasing protectionism, import/export restrictions, import/export duties and quotas, trade sanctions and customs duties and tariffs, all of which have increased in recent years;
- difficulty in obtaining product distribution and support, and transportation delays;
- potential inability to localize software products for a significant number of international markets;
- difficulty in conducting due diligence with respect to business partners in certain international markets;
- public health or safety concerns, medical epidemics or pandemics, such as COVID-19, and other natural- or man-made disasters;
- nationalization of businesses and expropriation of assets; and
- changes in U.S. and foreign tax laws.

A significant legal risk associated with conducting business internationally is compliance with the various and differing laws and regulations of the many countries in which we do business. In addition, the laws in various countries are constantly evolving and may, in some cases, conflict with each other. Although our policies prohibit us, our employees and our agents from engaging in unethical business practices, there can be no assurance that all of our employees, distributors or other agents will refrain from acting in violation of our related anti-corruption or other policies and procedures. Any such violation could have a material adverse effect on our business.

We are subject to risks associated with our distributors and other channel partners, including product inventory levels and product sell-through.

We sell our products through a direct sales force and a select network of distributors and other channel partners globally. Sales to distributors accounted for 53% of our net revenue in the fiscal year ended October 31, 2021 and are subject to a number of risks, including:

- fluctuations in demand based on our distributors’ product inventory levels and end customer demand in a given quarter;

- our distributors and other channel partners are generally not subject to minimum sales requirements or any obligation to market our products to their customers;
- our distributors and other channel partners agreements are generally nonexclusive and may be terminated at any time without cause;
- our lack of control over the timing of delivery of our products to end customers; and
- our distributors and other channel partners may market and distribute competing products and may place greater emphasis on the sale of these products.

In addition, we are selling our semiconductor products through an increasingly limited number of distributors, which exposes us to additional customer concentration and related credit risks.

We do not always have a direct relationship with the end customers of our products. As a result, our semiconductor products may be used in applications for which they were not necessarily designed or tested, including, for example, medical devices, and they may not perform as anticipated in such applications. In such event, failure of even a small number of parts could result in significant liabilities to us, damage our reputation and harm our business and results of operations.

Our business would be adversely affected by the departure of existing members of our senior management team.

Our success depends, in large part, on the continued contributions of our senior management team, and in particular, the services of Mr. Hock E. Tan, our President and Chief Executive Officer. Effective succession planning is also important for our long-term success. Failure to ensure effective transfers of knowledge and smooth transitions involving senior management could hinder our strategic planning and execution. None of our senior management is bound by written employment contracts. In addition, we do not currently maintain key person life insurance covering our senior management. The loss of any of our senior management could harm our ability to implement our business strategy and respond to the rapidly changing market conditions in which we operate.

If we are unable to attract and retain qualified personnel, especially our engineering and technical personnel, we may not be able to execute our business strategy effectively.

Our future success depends on our ability to attract, retain and motivate qualified personnel. As the source of our technological and product innovations, our engineering and technical personnel (including cyber security experts) are a significant asset. Competition for these employees is significant in many areas of the world in which we operate, particularly in Silicon Valley and Southeast Asia where qualified engineers are in high demand. In addition, current or future immigration laws may make it more difficult to hire or retain qualified engineers, further limiting the pool of available talent. Further, our employees may decide not to continue working for us and may leave with little or no notice. We believe equity awards provide a powerful long-term retention incentive and have historically granted these awards to the substantial majority of our employees. However, the amendments to our 2012 Stock Incentive Plan approved by our stockholders at our 2021 Annual Meeting of Stockholders significantly reduced the number of shares available for equity awards. As a result, we may need to change our current equity granting philosophy, which could impair our efforts to attract and retain necessary personnel. Any inability to retain, attract or motivate such personnel could have a material adverse effect on our business, financial condition and results of operations.

We may pursue acquisitions, investments, joint ventures and dispositions, which could adversely affect our results of operations.

Our growth strategy includes acquiring or investing in businesses that offer complementary products, services and technologies, or enhance our market coverage or technological capabilities.

Any acquisitions we may undertake and their integration involve risks and uncertainties, such as:

- unexpected delays, challenges and related expenses, and disruption of our business;
- diversion of management’s attention from daily operations and the pursuit of other opportunities;
- incurring significant restructuring charges and amortization expense, assuming liabilities (some of which may be unexpected) and ongoing or new lawsuits related to the transaction or otherwise, potential impairment of acquired goodwill and other intangible assets, and increasing our expenses and working capital requirements;

- the potential for deficiencies in internal controls at the acquired business, as well as implementing our own management information systems, operating systems and internal controls for the acquired operations;
- our due diligence process may fail to identify significant issues with the acquired company’s products, financial disclosures, accounting practices, legal, tax and other contingencies, compliance with local laws and regulations (and interpretations thereof) in the U.S. and multiple international jurisdictions;
- additional acquisition-related debt, which could increase our leverage and potentially negatively affect our credit ratings resulting in more restrictive borrowing terms or increased borrowing costs thereby limiting our ability to borrow;
- dilution of stock ownership of existing stockholders;
- difficulties integrating the acquired business or company and in managing and retaining acquired employees, vendors and customers; and
- inaccuracies in our original estimates and assumptions used to assess a transaction, which may result in us not realizing the expected financial or strategic benefits of any such transaction.

In addition, the current and the proposed changes to the U.S. and foreign regulatory approval process and requirements in connection with an acquisition may cause approvals to take longer than anticipated to obtain, not be forthcoming or contain burdensome conditions, which may jeopardize, delay or reduce the anticipated benefits of the transaction to us and could impede the execution of our business strategy.

From time to time, we may also seek to divest or wind down portions of our business, either acquired or otherwise, or we may exit minority investments, any of which could materially affect our cash flows and results of operations. Such dispositions involve risks and uncertainties, including our ability to sell such businesses on terms acceptable to us, or at all, disruption to other parts of our business, potential loss of employees or customers, or exposure to unanticipated liabilities or ongoing obligations to us following any such dispositions. In addition, dispositions may include the transfer of technology and/or the licensing of certain IP rights to third-party purchasers, which could limit our ability to utilize such IP rights or assert these rights against such third-party purchasers or other third parties.

We may be involved in legal proceedings, including IP, securities litigation, and employee-related claims, which could, among other things, divert efforts of management and result in significant expense and loss of our IP rights.

We are often involved in legal proceedings, including cases involving our IP rights and those of others, commercial matters, acquisition-related suits, securities class action suits, employee-related claims and other actions. Litigation or settlement of such actions, regardless of their merit, can be costly, lengthy, complex and time consuming, diverting the attention and energies of our management and technical personnel.

The industries in which we operate are characterized by companies holding large numbers of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including actions by patent-holding companies that do not make or sell products. From time to time, third parties assert against us and our customers and distributors their IP rights to technologies that are important to our business. For example, in August 2020 judgment was entered against Broadcom and Apple for infringement of certain patents pursuant to which California Institute of Technology was awarded past damages of $270.2 million from Broadcom and $837.8 million from Apple, for which Apple is seeking indemnification from Broadcom. Although we are appealing this judgment, there are no assurances that we will be successful.

Many of our customer agreements, and in some cases our asset sale agreements, and/or the laws of certain jurisdictions may require us to indemnify our customers or purchasers for third-party IP infringement claims, including costs to defend those claims, and payment of damages in the case of adverse rulings. However, our CMs and suppliers may or may not be required to indemnify us should we or our customers be subject to such third-party claims. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. If any pending or future proceedings result in an adverse outcome, we could be required to:

- cease the manufacture, use or sale of the infringing products, processes or technology and/or make changes to our processes or products;
- pay substantial damages for past, present and future use of the infringing technology, including up to treble damages if willful infringement is found;
- expend significant resources to develop non-infringing technology;
- license technology from the third-party claiming infringement, which license may not be available on commercially reasonable terms, or at all;
- enter into cross-licenses with our competitors, which could weaken our overall IP portfolio and our ability to compete in particular product categories;

- pay substantial damages to our direct or end customers to discontinue use or replace infringing technology with non-infringing technology; or
- relinquish IP rights associated with one or more of our patent claims.

Any of the foregoing results could have a material adverse effect on our business, financial condition and results of operations.

In addition, we may be obligated to indemnify our current or former directors or employees, or former directors or employees of companies that we have acquired, in connection with such litigation. These liabilities could be substantial and may include, among other things, the cost of defending lawsuits against these individuals, as well as stockholder derivative suits; civil or criminal fines and penalties; legal and other expenses; and expenses associated with the remedial measure, if any, which may be imposed.

Our operating results are subject to substantial quarterly and annual fluctuations.

Our operating results have fluctuated in the past and are likely to fluctuate in the future. These fluctuations may occur on a quarterly and annual basis and are due to a number of factors, many of which are beyond our control. In addition to many of the risks described elsewhere in this “Risk Factors” section, these factors include, among others:

- the timing of launches by our customers of new product in which our products are included and changes in end-user demand for our customers’ the products;
- fluctuations in the levels of component or product inventories held by our customers;
- the shift to cloud-based IT solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers;
- the timing of new software contracts and renewals, as well as the timing of any terminations of software contracts that require us to refund to customers any pre-paid amounts under the contract;
- our ability to timely develop, introduce and market new products and technologies;
- the timing and extent of our software license and subscription revenue, and other non-product revenue;
- new product announcements and introductions by us or our competitors;
- seasonality or other fluctuations in demand in our markets;
- timing and amount of research and development and related new product expenditures, and the timing of receipt of any research and development grant monies; and
- timing of any regulatory changes, particularly with respect to trade sanctions and customs duties and tariffs, and tax reform.

The foregoing factors are often difficult to predict, and these, as well as other factors, could materially adversely affect our quarterly or annual operating results. In addition, a significant amount of our operating expenses are relatively fixed in nature. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. As a result, we believe that quarter-to-quarter comparisons of our revenue and operating results may not be meaningful or a reliable indicator of our future performance. If our operating results in one or more future quarters fail to meet the expectations of securities analysts or investors, a significant decline in the trading price of our common stock may occur, which may happen immediately or over time.

Failure to adjust our manufacturing and supply chain to accurately meet customer demand could adversely affect our results of operations.

We make significant decisions, including determining the levels of business that we will seek and accept, production schedules, levels of reliance on contract manufacturing and outsourcing, internal fabrication utilization and other resource requirements, based on our estimates of customer requirements, which may not be accurate.

During the COVID-19 pandemic, we have moved largely to a build to order model and have extended customer lead times substantially in light of supply chain challenges. More typically, however, to ensure the availability of our semiconductor products we start manufacturing based on customer forecasts, which are not binding. As a result, we incur inventory and manufacturing costs in advance of anticipated sales that may be substantially lower than expected. If actual demand for our products is lower than forecast, we may also experience higher inventory carrying and operating costs and product obsolescence. Because certain of our sales, research and development, and internal manufacturing overhead expenses are relatively fixed, a reduction in customer demand may also decrease our gross margin and operating income.

Conversely, customers often require rapid increases in production on short notice. If we are unable to meet such increases in demand, this could damage our customer relationships, reduce revenue growth and margins, subject us to additional liabilities, harm our reputation, and prevent us from taking advantage of opportunities.

Winning business in the semiconductor solutions industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.

Our semiconductor business is dependent on us winning competitive bid selection processes, known as "design wins". These selection processes are typically lengthy and can require us to dedicate significant development expenditures and scarce engineering resources in pursuit of a single customer opportunity. Failure to obtain a particular design win may prevent us from obtaining design wins in subsequent generations of a particular product. This can result in lost revenue and can weaken our position in future selection processes.

Winning a product design does not guarantee sales to a customer. A delay or cancellation of a customer's plans could materially and adversely affect our financial results, as we incur significant expense in the design process and may generate little or no revenue from it. In addition, the timing of design wins is unpredictable and implementing production for a major design win, or multiple design wins at the same time, may strain our resources and those of our CMs. In such event, we may be forced to dedicate significant additional resources and incur additional costs and expenses. Further, often customers will only purchase limited numbers of evaluation units until they qualify the products and/or the manufacturing line for those products. The qualification process can take significant time and resources. Delays in qualification or failure to qualify our products may cause a customer to discontinue use of our products and result in a significant loss of revenue. Finally, customers could choose at any time to stop using our products or could fail to successfully market and sell their products, which could reduce demand for our products, and cause us to hold excess inventory, materially adversely affecting our business, financial condition and results of operations. These risks are exacerbated by the fact that many of our products, and the end products into which our products are incorporated, often have very short life cycles.

Competition in our industries could prevent us from growing our revenue.

The industries in which we operate are highly competitive and characterized by rapid technological changes, evolving industry standards, changes in customer requirements, often aggressive pricing practices and, in some cases, new delivery methods. We expect competition in these industries to continue to increase as existing competitors improve or expand their product offerings or as new competitors enter our markets.

Some of our competitors have longer operating histories, greater name recognition, a larger installed customer base, larger technical staffs, more established relationships with vendors or suppliers, or greater manufacturing, distribution, financial, research and development, technical and marketing resources than us. We also face competition from numerous smaller companies that specialize in specific aspects of the highly fragmented software industry, open source authors who provide software and IP for free, competitors who offer their products through try-and-buy or freemium models, and customers who develop competing products.

In addition, the trend toward consolidation is changing the competitive landscape. We expect this trend to continue, which may result in combined competitors having greater resources than us. Some of our competitors may also receive financial and other support from their home country government or may have a greater presence in key markets, a larger customer base, a more comprehensive IP portfolio or better patent protection than us.

The actions of our competitors, in the areas of pricing and product bundling in particular, could have a substantial adverse impact on us. Further, competitors may leverage their superior market position, as well as IP or other proprietary information, including interface, interoperability or technical information, in new and emerging technologies and platforms that may inhibit our ability to compete effectively. If we are unable to compete successfully, we may lose market share for our products or incur significant reduction in our gross margins, either of which could have a material adverse effect on our business and results of operations.

A prolonged disruption of our manufacturing facilities, research and development facilities, warehouses or other significant operations, or those of our suppliers, could have a material adverse effect on our business, financial condition and results of operations.

Although we operate a primarily outsourced manufacturing business model, we also rely on our own manufacturing facilities, in particular in Fort Collins, Colorado, Singapore, and Breinigsville, Pennsylvania. We use these internal fabrication facilities for products utilizing our innovative and proprietary processes. Our Fort Collins and Breinigsville facilities are the sole sources for the FBAR components used in many of our wireless devices and for the indium phosphide-based wafers used in our fibre optics products, respectively. Many of our facilities, and those of our CMs and suppliers, are located in California and the Pacific Rim region, which have above average seismic activity and severe weather activity. In addition, a significant majority of our research and development personnel are located the Czech Republic, India, Israel, Singapore and the U.S., with the expertise of the personnel at each such location tending to be focused on one or two specific areas, and our primary warehouse is in Malaysia.

A prolonged disruption at or shut-down of one or more of our manufacturing facilities or warehouses, especially our Colorado, Singapore, Malaysia and Pennsylvania facilities, or those of our CMs or suppliers, due to natural- or man-made disasters or other events outside of our control, such as equipment malfunction or widespread outbreaks of acute illness, including COVID-19, or for any other reason, would limit our capacity to meet customer demands and delay new product development until a replacement facility and equipment, if necessary, were found. Any such event would likely disrupt our operations, delay production, shipments and revenue, result in us being unable to timely satisfy customer demand, expose us to claims by our customers, result in significant expense to repair or replace our affected facilities, and, in some instances, could significantly curtail our research and development efforts in a particular product area or target market. As a result, we could forgo revenue opportunities, potentially lose market share, damage our customer relationships and be subject to litigation and additional liabilities, all of which could materially and adversely affect our business. Although we purchase insurance to mitigate certain losses, such insurance often carries a high deductible amount and any uninsured losses could negatively affect our operating results. In addition, even if we were able to promptly resume production of our affected products, if our customers cannot timely resume their own manufacturing following such an event, they may cancel or scale back their orders from us and this may in turn adversely affect our results of operations. Such events could also result in increased fixed costs relative to the revenue we generate and adversely affect our results of operations.

We may be unable to maintain appropriate manufacturing capacity or product yields at our own manufacturing facilities, which could adversely affect our relationships with our customers, and our business, financial condition and results of operations.

We must maintain appropriate capacity and product yields at our own manufacturing facilities to meet anticipated customer demand. From time to time, this requires us to invest in expansion or improvements of those facilities, which often involves substantial cost and other risks. Such expanded manufacturing capacity may still be insufficient, or may not come online soon enough, to meet customer demand and we may have to put customers on product allocation, forgo sales or lose customers as a result. Conversely, if we overestimate customer demand, we would experience excess capacity and fixed costs at these facilities will not be fully absorbed, all of which could adversely affect our results of operations. Similarly, reduced product yields, due to design or manufacturing issues or otherwise, may involve significant time and cost to remedy and cause delays in our ability to supply product to our customers, all of which could cause us to forgo sales, incur liabilities or lose customers, and harm our results of operations.

In addition, current and future government restrictions imposed as a result of the COVID-19 pandemic that limit our manufacturing capabilities could severely impact our ability to manufacture our proprietary products, adversely affecting our wireless business.

Any failure of our IT systems or one or more of our corporate infrastructure vendors to provide necessary services could have a material adverse effect on our business.

Our business depends on various IT systems and outsourced IT services. We rely on third-party vendors to provide critical corporate infrastructure services and to adequately address cyber security threats to their own systems. Services provided by these third parties include services related to financial reporting, product orders and shipping, human resources, benefit plan administration, IT network development and network monitoring. While we may be entitled to damages if our vendors fail to perform under their agreements with us, any award may be insufficient to cover the actual costs incurred by us and, as a result of a vendor’s failure to perform, we may be unable to collect any damages.

Any failure of these internal or third-party systems and services to operate effectively could disrupt our operations and could have a material adverse effect on our business, financial condition and results of operations.

Our gross margin is dependent on a number of factors, including our product mix, price erosion, acquisitions we may make, level of capacity utilization and commodity prices.

Our gross margin is highly dependent on product mix, which is susceptible to seasonal and other fluctuations in our markets. A shift in sales mix away from our higher margin products, as well as the timing and amount of our software licensing and non-product revenue, could adversely affect our future gross margin percentages. In addition, increased competition and the existence of product alternatives, more complex engineering requirements, lower demand or reductions in our technological lead compared to our competitors, and other factors have in the past and may in the future lead to further price erosion, lower revenue and lower margin. Conversely, periods of robust demand that create a supply imbalance, as we have seen recently, can lead to higher gross margins that may not be sustainable over the longer-term.

In addition, semiconductor manufacturing requires significant capital investment, leading to high fixed costs, including depreciation expense. If we are unable to utilize our owned manufacturing facilities at a high level, the fixed costs associated with these facilities will not be fully absorbed, resulting in higher average unit costs and a lower gross margin. Furthermore, we do not hedge our exposure to commodity prices, some of which are very volatile, and sudden or prolonged increases in commodities prices may adversely affect our gross margin.

Our gross margin may also be adversely affected if businesses or companies that we acquire have different gross margin profiles and by expenses related to such acquisitions.

We utilize a significant amount of IP in our business. If we are unable or fail to protect our IP, our business could be adversely affected.

Our success depends in part upon protecting our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks and trade secrets, as well as customary contractual protections with our customers, suppliers, employees and consultants. We spend significant resources to monitor and protect our IP rights, including the unauthorized use of our products, usage rates of the software seat licenses and subscriptions that we sell, and even with significant expenditures, we may not be able to protect the IP rights that are valuable to our business. We are unable to predict or assure that:

- our IP rights will not lapse or be invalidated, circumvented, challenged, or, in the case of third-party IP rights licensed to us, be licensed to others;
- our IP rights will provide competitive advantages to us;
- rights previously granted by third parties to IP licensed or assigned to us, including portfolio cross-licenses, will not hamper our ability to assert our IP rights or hinder the settlement of currently pending or future disputes;
- any of our pending or future patent, trademark or copyright applications will be issued or have the coverage originally sought;
- our IP rights will be enforced in certain jurisdictions where competition is intense or where legal protection may be weak; or
- we have sufficient IP rights to protect our products or our business.

Effective IP protection may be unavailable or more limited in other jurisdictions, relative to those protections available in the U.S., and may not be applied for or may be abandoned in one or more relevant jurisdictions. In addition, when patents expire, we lose the protection and competitive advantages they provided to us.

We also generate revenue from licensing royalty payments and from technology claim settlements relating to certain of our IP. Licensing of our IP rights, particularly exclusive licenses, may limit our ability to assert those IP rights against third parties, including the licensee of those rights. In addition, we may acquire companies with IP that is subject to licensing obligations to other third parties. These licensing obligations may extend to our own IP following any such acquisition and may limit our ability to assert our IP rights. From time to time, we pursue litigation to assert our IP rights, including, in some cases, against our customers and suppliers. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. Conversely, third parties have and may in the future pursue IP litigation against us, including as a result of our IP licensing business. An adverse decision in such types of legal action could limit our ability to assert our IP rights and limit the value of our technology, including the loss of opportunities to sell or license our technology to others or to collect royalty payments, which could otherwise negatively impact our business, financial condition and results of operations.

From time to time, we may need to obtain additional IP licenses or renew existing license agreements. We are unable to predict whether these license agreements can be obtained or renewed on acceptable terms or at all.

If our software products do not remain compatible with ever-changing operating environments, platforms, or third-party products, demand for our products and services could decrease, which could materially adversely affect our business.

We may be required to make substantial modification of our products to maintain compatibility with operating systems, systems software and computer hardware used by our customers or to provide our customers with desired features or capabilities. We must also continually address the challenges of dynamic and accelerating market trends and competitive developments, such as the emergence of advanced persistent threats in the security space to compete effectively. There can be no assurance that we will be able to adapt our products in response to these developments.

Further, our software solutions interact with a variety of software and hardware developed by third parties. If we lose access to third-party code and specifications for the development of code, this could negatively impact our ability to develop compatible software. In addition, if software providers and hardware manufacturers, including some of our largest vendors, adopt new policies restricting the use or availability of their code or technical documentation for their operating systems, applications, or hardware, or otherwise impose unfavorable terms and conditions for such access, this could result in higher research and development costs for the enhancement and modification of our existing products or development of new products. Any additional restrictions could materially adversely affect our business, financial condition and operating results and cash flow.

Failure to enter into software license agreements on a satisfactory basis could materially adversely affect our business.

Many of our existing customers have multi-year enterprise software license agreements, some of which involve substantial aggregate fee amounts. Customer renewal rates may decline or fluctuate as a result of a number of factors, including the level of customer satisfaction with our solutions or customer support, customer budgets and the pricing of our solutions as compared with the solutions offered by our competitors, any of which may cause our revenue to grow more slowly than expected, if at all. The failure to renew customer agreements of similar scope, on terms that are commercially attractive to us, could materially adversely affect our business, financial condition and operating results and cash flow.

Certain software that we use in our products is licensed from third parties and may not be available to us in the future, which may delay product development and production or cause us to incur additional expense.

Some of our solutions contain software licensed from third parties, some of which may not be available to us in the future on terms that are acceptable to us or allow our products to remain competitive. The loss of these licenses or the inability to maintain any of them on commercially acceptable terms could delay development of future products or the enhancement of existing products.

Certain software we use is from open source code sources, which, under certain circumstances could materially adversely affect our business, financial condition, operating results and cash flow.

Some of our products contain software from open source code sources, the use of which may subject us to certain conditions, including the obligation to offer such products for no cost or to make the proprietary source code of those products publicly available. Further, although some open source vendors provide warranty and support agreements, it is common for such software to be available "as-is" with no warranty, indemnity or support. Although we monitor our use of such open source code to avoid subjecting our products to unintended conditions, such use, under certain circumstances, could materially adversely affect our business, financial condition and operating results and cash flow, including if we are required to take remedial action that may divert resources away from our development efforts.

We are subject to warranty claims, product recalls and product liability.

From time to time, we may be subject to warranty or product liability claims that may lead to significant expense. Our customer contracts typically contain warranty and indemnification provisions, and in certain cases may also contain liquidated damages provisions, relating to product quality issues. The potential liabilities associated with such provisions are significant, and in some cases, including in agreements with some of our largest customers, are potentially unlimited. Any such liabilities may greatly exceed any revenue we receive from the relevant products. Costs, payments or damages incurred or paid by us in connection with warranty and product liability claims and product recalls could materially adversely affect our financial condition and results of operations. We may also be exposed to such claims as a result of any acquisition we may undertake in the future.

Product liability insurance is subject to significant deductibles and there is no guarantee that such insurance will be available or adequate to protect against all such claims, or we may elect to self-insure with respect to certain matters. For example, it is possible for one of our customers to recall a product containing one of our semiconductor devices. In such an event, we may incur significant costs and expenses, including among others, replacement costs, contract damage claims from our customers and reputational harm. Although we maintain reserves for reasonably estimable liabilities and purchase product liability insurance, our reserves may be inadequate to cover the uninsured portion of such claims. Conversely, in some cases, amounts we reserve may ultimately exceed our actual liability for particular claims and may need to be reversed.

The complexity of our products could result in unforeseen delays or expense or undetected defects or bugs, which could adversely affect the market acceptance of new products, damage our reputation with current or prospective customers, and materially and adversely affect our operating costs.

Highly complex products, such as those we offer, may contain defects and bugs when they are first introduced or as new versions, software documentation or enhancements are released, or their release may be delayed due to unforeseen difficulties during product development. If any of our products or third-party components used in our products, contain defects or bugs, or have reliability, quality or compatibility problems, we may not be able to successfully design workarounds. Furthermore, if any of these problems are not discovered until after we have commenced commercial production or deployment of a new product, we may be required to incur additional development costs and product recall, repair or replacement costs. Significant technical challenges also arise with our software products because our customers license and deploy our products across a variety of computer platforms and integrate them with a number of third-party software applications and databases. As a result, if there is system-wide failure or an actual or perceived breach of information integrity, security or availability occurs in one of our end-user customer’s system, it can be difficult to determine which product is at fault and we could ultimately be harmed by the failure of another supplier’s product. Consequently, our reputation may be damaged and customers may be reluctant to buy our products, which could materially and adversely affect our ability to retain existing customers and attract new customers. To resolve these problems, we may have to invest significant capital and other resources and we would likely lose, or experience a delay in, market acceptance of the affected product or products. These problems may also result in claims against us by our customers or others. For example, if a delay in the manufacture and delivery of our products causes the delay of a customer’s end-product delivery, we may be required, under the terms of our agreement with that customer, to compensate the customer for the adverse effects of such delays. As a result, our financial results could be materially adversely affected.

We make substantial investments in research and development and unsuccessful investments could materially adversely affect our business, financial condition and results of operations.

The industries in which we compete are characterized by rapid technological change, changes in customer requirements, frequent new product introductions and enhancements, short product cycles and evolving industry standards, and new delivery methods. In addition, semiconductor products transition over time to increasingly smaller line width geometries and failure to successfully transition to smaller geometry process technologies could impair our competitive position. In order to remain competitive, we have made, and expect to continue to make, significant investments in research and development. If we fail to develop new and enhanced products and technologies, if we focus on technologies that do not become widely adopted, or if new competitive technologies that we do not support become widely accepted, demand for our products may be reduced. Increased investments in research and development or unsuccessful research and development efforts could cause our cost structure to fall out of alignment with demand for our products, which would have a negative impact on our financial results.

We collect, use, store, or otherwise process personal information, which subjects us to privacy and data security laws and contractual commitments, and our actual or perceived failure to comply with such laws and commitments could harm our business.

We collect, use and store (collectively, "process") a high volume, variety and velocity of certain personal information in connection with the operation of our business. This creates various levels of privacy risks across different parts of our business, depending on the type of personal information, the jurisdiction in question and the purpose of their processing. The personal information we process is subject to an increasing number of federal, state, local, and foreign laws and regulations regarding privacy and data security, as well as contractual commitments. Privacy legislation and other data protection regulations, enforcement and policy activity in this area are expanding rapidly in many jurisdictions and creating a complex regulatory compliance environment. Sectoral legislation, certification requirements and technical standards applying to certain categories of our customers, such as those is the financial services or public sector, are likely to further exacerbate this trend. The cost of complying with and implementing these privacy-related and data governance measures could be significant as they may create additional burdensome security, business process, business record or data localization requirements. Concerns about government interference, sovereignty, expanding privacy, cyber security and data governance legislation could adversely affect our customers and our products and services, particularly in cloud computing, artificial intelligence and our own data management practices. The theft, loss or misuse of personal data collected, used, stored or transferred by us to run our business could result in significantly increased business and security costs or costs related to defending legal claims. Any inadvertent failure or perceived failure by us to comply with privacy, data governance or cyber security obligations may result in governmental enforcement actions, litigation, substantial fines and damages, and could cause our customers to lose trust in us, which could have an adverse effect on our reputation and business.

We are subject to environmental, health and safety laws, which could increase our costs, restrict our operations and require expenditures that could have a material adverse effect on our results of operations and financial condition.

We are subject to a variety of international laws and regulations relating to the use, disposal, clean-up of and human exposure to hazardous materials. Compliance with environmental, health and safety requirements could, among other things, require us to modify our manufacturing processes, restrict our ability to expand our facilities, or require us to acquire pollution control equipment, all of which can be very costly. Any failure by us to comply with such requirements could result in the limitation or suspension of the manufacture of our products and could result in litigation against us and the payment of significant fines and damages by us in the event of a significant adverse judgment. In addition, complying with any cleanup or remediation obligations for which we are or become responsible could be costly and have a material adverse effect on our business, financial condition and results of operations.

Changing requirements relating to the materials composition of our semiconductor products, including the restrictions on lead and certain other substances in electronic products sold in various countries, including the U.S., China and Japan, and in the European Union, increase the complexity and costs of our product design and procurement operations and may require us to re-engineer our products. Such re-engineering may result in excess inventory or other additional costs and could have a material adverse effect on our results of operations. We may also experience claims from employees from time to time with regard to exposure to hazardous materials or other workplace related environmental claims.

Social and environmental responsibility regulations, policies and provisions, as well as customer and investor demands, may make our supply chain more complex and may adversely affect our relationships with customers and investors.

There is an increasing focus on corporate social and environmental responsibility in the semiconductor industry, particularly with OEMs that manufacture consumer electronics. A number of our customers have adopted, or may adopt, procurement policies that include social and environmental responsibility provisions or requirements that their suppliers should comply with, or they may seek to include such provisions or requirements in their procurement terms and conditions.

An increasing number of investors are also requiring companies to disclose corporate social and environmental policies, practices and metrics. In addition, various jurisdictions are developing climate change-based laws or regulations that could cause us to incur additional direct costs for compliance, as well as indirect costs resulting from our customers, suppliers, or both incurring additional compliance costs that are passed on to us. These legal and regulatory requirements, as well as investor expectations, on corporate environmental and social responsibility practices and disclosure, are subject to change, can be unpredictable, and may be difficult and expensive for us to comply with, given the complexity of our supply chain and our significant outsourced manufacturing. If we are unable to comply, or are unable to cause our suppliers or CMs to comply, with such policies or provisions or meet the requirements of our customers and investors, a customer may stop purchasing products from us or an investor may sell their shares, and may take legal action against us, which could harm our reputation, revenue and results of operations.

In addition, as part of their corporate social and environmental responsibility programs, an increasing number of OEMs are seeking to source products that do not contain minerals sourced from areas where proceeds from the sale of such minerals are likely to be used to fund armed conflicts, such as in the Democratic Republic of Congo. This could adversely affect the sourcing, availability and pricing of minerals used in the manufacture of semiconductor devices, including our products. As a result, we may face difficulties in satisfying these customers' demands, which may harm our sales and operating results.

The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future, which could harm our revenue and gross profit.

The semiconductor products we develop and sell are used for high volume applications. As a result, the prices of those products have often decreased rapidly. Gross profit on our products may be negatively affected by, among other things, pricing pressures from our customers. In the past, we have reduced the average selling prices of our products in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. In addition, some of our customer agreements provide for volume-based pricing and product pricing roadmaps, which can also reduce the average selling prices of our products over time. Our margins and financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing manufacturing costs, or developing new and higher value-added products on a timely basis.

A breach of our security systems may have a material adverse effect on our business.

Our security systems are designed to protect and secure our facilities and our customers', suppliers' and employees' confidential information, as well as our own proprietary information. However, we are also dependent on a number of third-party cloud-based and other service providers of critical corporate infrastructure services relating to, among other things, human resources, electronic communication services and certain finance functions, and we are, out of necessity, dependent on the security systems of these providers. In addition, all software, including the security technologies produced by us have had occasionally in the past and may have in the future, vulnerabilities that, if left unmanaged could reduce the overall level of security.

Accidental or willful security breaches or other unauthorized access of our facilities, our information systems or the systems of our service providers, or the existence of computer viruses or malware (such as ransomware) in our or their data or software could expose us to a risk of information loss, business disruption, and misappropriation of proprietary and confidential information, including information relating to our products or customers and the personal information of our employees. We have, from time to time, been subject to or there have been attempts of unauthorized network intrusions and malware on our own IT networks. As a result of the COVID-19 pandemic, remote access to our networks and systems has increased substantially. While we have taken steps to secure our networks and systems, we may be more vulnerable to a successful cyber-attack or information security incident when our workforce works remotely.

Certain aspects of our software products are intended to manage and secure IT infrastructures and environments, and as a result, we expect these products to be ongoing targets of cyber security attacks. Open source code or other third-party software used in these products could also be targeted. Additionally, we use third-party data centers, which may also be subject to hacking or accidental incidents. Although we continually seek to improve our countermeasures to prevent such incidents, we may be unable to anticipate every scenario and it is possible that certain cyber threats or vulnerabilities will be undetected or unmitigated in time to prevent an attack or an accidental incident on us and our customers. Cyber security attacks could require significant expenditures of our capital and diversion of our resources. Additionally, efforts by malicious cyber actors or others could cause interruptions, delays or cessation of our product licensing, or modification of our software, which could cause us to lose existing or potential customers. A successful cyber security attack involving our products and IT infrastructure could also negatively impact the market perception of their effectiveness and adversely affect our reputation, relationship with our customers and our financial results.

Any theft, accidental loss or misuse of confidential, personally identifiable or proprietary information could disrupt our business and result in, among other things, unfavorable publicity, damage to our reputation, loss of our trade secrets and other competitive information, difficulty in marketing our products, allegations by our customers that we have not performed our contractual obligations, litigation by affected parties and possible financial obligations for liabilities and damages related to the theft or misuse of such information, as well as fines and other sanctions resulting from any related breaches of data privacy regulations (such as the General Data Protection Regulation), any of which could have a material adverse effect on our business, profitability and financial condition. Interruptions in our operations and services or disruptions to the functionality provided by our software could adversely impact our revenues or cause customers to cease doing business with us. In addition, our business would be harmed if any of the events of this nature caused our customers and potential customers to believe our services are unreliable. Our operations are dependent upon our ability to protect our technology infrastructure against damage from business continuity events that could have a significant disruptive effect on our operations. Since the techniques used to obtain unauthorized access to systems or to otherwise sabotage them, change frequently and are often not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures.

Fluctuations in foreign exchange rates could result in losses.

We operate global businesses and our consolidated financial results are reported in U.S. dollars. However, some of the revenue and expenses of our foreign subsidiaries are denominated in local currencies. Fluctuations in foreign exchange rates against the U.S. dollar could result in substantial changes in reported revenues and operating results due to the foreign exchange impact of translating these transactions into U.S. dollars.

In the normal course of business, we employ various hedging strategies to partially mitigate these risks, including the use of derivative instruments. These strategies may not be effective in protecting us against the effects of fluctuations in foreign exchange rates. As a result, fluctuations in foreign exchange rates could result in financial losses.

Risks Related to Our Taxes

Changes in tax legislation or policies could materially impact our financial position and results of operations.

Corporate tax reform, anti-base-erosion rules and tax transparency continue to be high priorities in many jurisdictions. As a result, policies regarding corporate income and other taxes in numerous jurisdictions are under heightened scrutiny and tax reform legislation has been, and will likely continue to be, proposed or enacted in a number of jurisdictions in which we operate.

After enactment of the U.S. Tax Cuts and Jobs Act (the “2017 Tax Reform Act”), most of our income is taxable in the U.S. with a significant portion taxable under the Global Intangible Low-Taxed Income (“GILTI”) regime. Beginning in fiscal year 2027, the deduction allowable under the GILTI regime will decrease from 50% to 37.5%, which will increase the effective tax rate imposed on our income. If the U.S. tax rate increases or the deduction allowable under the GILTI regime is further reduced or eliminated, or additional limitations are put on our ability to deduct interest expense, our provision for income taxes, net income, and cash flows would be adversely impacted.

In addition, many countries are implementing legislation and other guidance to align their international tax rules with the Organisation for Economic Co-operation and Development’s (“OECD”) Base Erosion and Profit Shifting recommendations and action plan that aim to standardize and modernize global corporate tax policy, including changes to cross-border tax, transfer pricing documentation rules, and nexus-based tax incentive practices. The OECD is also continuing discussions surrounding fundamental changes in allocation of profits among tax jurisdictions in which companies do business, as well as the implementation of a global minimum tax (namely the “Pillar One” and “Pillar Two” proposals). As a result of this heightened scrutiny, prior decisions by tax authorities regarding treatments and positions of corporate income taxes could be subject to enforcement activities, and legislative investigation and inquiry, which could also result in changes in tax policies or prior tax rulings. Any such changes may also result in the taxes we previously paid being subject to change. Further, many jurisdictions have passed, and may pass additional legislation, intended to alleviate the economic burdens of COVID-19 and to fund economic recovery and growth, including various temporary tax incentives or relief and restricted tax measures, which could result in future tax increases. We cannot predict the extent to which the COVID-19 pandemic will impact our tax liabilities and are continuing to evaluate the impact of the new legislation to our financial statements.

Any substantial changes in domestic or international corporate tax policies, regulations or guidance, enforcement activities or legislative initiatives may materially adversely affect our business, the amount of taxes we are required to pay and our financial condition and results of operations generally.

If the tax incentives or tax holiday arrangements we have negotiated change or cease to be in effect or applicable for any reason, or if our assumptions and interpretations regarding tax laws and incentives or holiday arrangements prove to be incorrect, our corporate income taxes could significantly increase.

Our operations are currently structured to benefit from the various tax incentives extended to us in various jurisdictions to encourage investment or employment. For example, absent our principal tax incentives from the Singapore Economic Development Board, which is scheduled to expire in 2025, the corporate income tax rate that would apply to our Singapore taxable income would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. Each tax incentive and tax holiday is subject to our compliance with various operating and other conditions and may, in some instances, be amended or terminated prior to their scheduled termination date by the relevant governmental authority. If we cannot, or elect not to, comply with the operating conditions included in any particular tax incentive or tax holiday, we could, in some instances, be required to refund previously realized material tax benefits, or if such tax incentive or tax holiday is terminated prior to its expiration absent a new incentive applying, we will lose the related tax benefits earlier than scheduled. In addition, we may be required, or elect, to modify our operational structure and tax strategy in order to keep an incentive, which could result in a decrease in the benefits of the incentive. Our tax incentives and tax holiday, before taking into consideration U.S. foreign tax credits, decreased the provision for income taxes by approximately $1,156 million in the aggregate and increased diluted net income per share by $2.69 for fiscal year 2021.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded, we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows.

Our income taxes and overall cash tax costs are affected by a number of factors that could materially, adversely affect financial results.

Significant judgment is required in determining our worldwide income taxes. In the ordinary course of our business, there are many transactions where the ultimate tax determination is uncertain. Additionally, our calculations of income taxes payable currently and on a deferred basis are based on our interpretations of applicable tax laws in the jurisdictions in which we are required to file tax returns. Although we believe our tax estimates are reasonable, there is no assurance that the final determination of our income tax liability will not be materially different than what is reflected in our income tax provisions and accruals.

Our income taxes are subject to volatility and could be adversely affected by numerous factors including:

- reorganization or restructuring of our businesses, tangible and intangible assets, outstanding indebtedness and corporate structure;
- jurisdictional mix of our income and assets;
- changes in the allocation of income and expenses, including adjustments related to changes in our corporate structure, acquisitions or tax law;
- changes in U.S and foreign tax laws and regulations, changes to the taxation of earnings of foreign subsidiaries, taxation of U.S. income generated from foreign sources, the deductibility of expenses attributable to income and foreign tax credit rules;
- tax effects of increases in non-deductible employee compensation; and

- changes in tax accounting rules or principles and in the valuation of deferred tax assets and liabilities.

We have adopted transfer pricing policies that call for the provision of services, the sale of products, the arrangement of financing and the grant of licenses from one affiliate to another at prices that we believe are negotiated on an arm's length basis. Our taxable income is dependent upon acceptance by local authorities that our operational practices and intercompany transfer pricing are on an arm's length basis. Due to inconsistencies in application of the arm's length standard among taxing authorities, as well as lack of comprehensive treaty-based protection, transfer pricing challenges by tax authorities could, if successful, result in adjustments for prior or future years. The effects of any such changes could subject us to higher taxes and our earnings, results of operations and cash flow would be adversely affected.

In addition, we are subject to, and are under, tax audit in various jurisdictions, and such jurisdictions may assess additional income tax against us. Although we believe our tax positions are reasonable, the final determination of tax audits could be materially different from our income tax provisions and accruals. The ultimate result of an audit could have a material adverse effect on our results of operations and cash flows in the period or periods for which that determination is made.

Risks Related to Our Indebtedness

Our substantial indebtedness could adversely affect our financial health and our ability to execute our business strategy.

As of October 31, 2021, the aggregate indebtedness under our senior notes was $41,499 million. We expect to maintain significant levels of indebtedness going forward.

Our substantial indebtedness could have important consequences including:

- increasing our vulnerability to adverse general economic and industry conditions;
- exposing us to interest rate risk due to our variable rate term facilities, which we do not typically hedge against;
- limiting our flexibility in planning for, or reacting to, changes in the economy and the semiconductor industry;
- placing us at a competitive disadvantage compared to our competitors with less indebtedness;
- making it more difficult to borrow additional funds in the future to fund growth, acquisitions, working capital, capital expenditures and other purposes; and
- potentially requiring us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund our other business needs.

We receive debt ratings from the major credit rating agencies in the U.S. Factors that may impact our credit ratings include debt levels, planned asset purchases or sales and near-term and long-term production growth opportunities. Liquidity, asset quality, cost structure, reserve mix and commodity pricing levels could also be considered by the rating agencies. While we are focused on maintaining investment grade ratings from these agencies, we may be unable to do so. Any downgrade in our credit rating or the ratings of our indebtedness, or adverse conditions in the debt capital markets, could:

- adversely affect the trading price of, or market for, our debt securities;
- increase interest expense under our term facilities;
- increase the cost of, and adversely affect our ability to refinance, our existing debt; and
- adversely affect our ability to raise additional debt.

The instruments governing our indebtedness impose certain restrictions on our business.

The instruments governing our indebtedness contain certain covenants imposing restrictions on our business. These restrictions may affect our ability to operate our business, to plan for, or react to, changes in the market conditions or our capital needs and may limit our ability to take advantage of potential business opportunities as they arise. The restrictions placed on us include maintenance of an interest coverage ratio and limitations on our ability to incur certain secured debt, enter into certain sale and lease-back transactions and consolidate, merge, sell or otherwise dispose of all or substantially all of our assets. In addition, the instruments contain customary events of default upon the occurrence of which, after any applicable grace period, the indebtedness could be declared immediately due and payable. In such event, we may not have sufficient available cash to repay such debt at the time it becomes due, or be able to refinance such debt on acceptable terms or at all. Any of the foregoing could materially adversely affect our business, financial condition and results of operations.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on, and to refinance our debt, depends on our future performance, which is subject to economic, financial, competitive and other factors. Our business may not continue to generate cash flow from operations in the future sufficient to satisfy our obligations under our current indebtedness and any future indebtedness we may incur and to make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as reducing or delaying investments or capital expenditures, selling assets, refinancing or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our outstanding indebtedness or future indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms when needed, which could result in a default on our indebtedness.

Risks Related to Owning Our Common Stock

At times, our stock price has been volatile and it may fluctuate substantially in the future, which could result in substantial losses for our investors as well as class action litigation against us and our management which could cause us to incur substantial costs and divert our management's attention and resources.

The trading price of our common stock has, at times, fluctuated significantly and could be subject to wide fluctuations in response to any of the risk factors listed in this "Risk Factors" section, and others, including:

- issuance of new or updated research or other reports by securities analysts;
- fluctuations in the valuation and results of operations of our significant customers as well as companies perceived by investors to be comparable to us;
- announcements of proposed acquisitions by us or our competitors;
- announcements of, or expectations of, additional debt or equity financing transactions;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our common stock;
- issuance, and subsequent sale, of common stock upon conversion of our 8.00% Mandatory Convertible Preferred Stock, Series A ("Mandatory Convertible Preferred Stock");
- hedging or arbitrage trading activity involving our Mandatory Convertible Preferred Stock or common stock; and
- unsubstantiated news reports or other inaccurate publicity regarding us or our business.

These fluctuations are often unrelated or disproportionate to our operating performance. Broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or currency fluctuations, may negatively impact the market price of our common stock. You may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. We are also the subject of a number of lawsuits stemming from our acquisitions. Securities litigation against us, including the lawsuits related to such transactions, could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

The amount and frequency of our stock repurchases may fluctuate.

The amount, timing and execution of our stock repurchase program may fluctuate based on our priorities for the use of cash for other purposes. These purposes include operational spending, capital spending, acquisitions, repayment of debt and returning cash to our stockholders as dividend payments. Changes in cash flows, tax laws and our stock price could also impact our stock repurchase program. We are not obligated to repurchase any specific amount of shares of common stock, and the stock repurchase program may be suspended or terminated at any time.

A substantial amount of our stock is held by a small number of large investors and significant sales of our common stock by one or more of these holders could cause our stock price to fall.

As of September 30, 2021, we believe 10 of our 20 largest holders of common stock were active institutional investors who held approximately 31% of our outstanding shares of common stock in the aggregate, with Capital World Investors being our largest stockholder with approximately 9% of our outstanding shares of common stock. These investors may sell their shares at any time for a variety of reasons and such sales could depress the market price of our common stock. In addition, any such sales of our common stock by these entities could also impair our ability to raise capital through the sale of additional equity securities.

There can be no assurance that we will continue to declare cash dividends.

Our Board of Directors has adopted a dividend policy pursuant to which we currently pay a cash dividend on our common stock on a quarterly basis. The declaration and payment of any dividend is subject to the approval of our Board of Directors and our dividend may be discontinued or reduced at any time. Because we are a holding company, our ability to pay cash dividends is also limited by restrictions or limitations on our ability to obtain sufficient funds through dividends from subsidiaries. In addition, any payment of dividends on our common stock is subject to and conditioned upon our payment of quarterly dividends on our Mandatory Convertible Preferred Stock. There can be no assurance that we will declare cash dividends in the future in any particular amounts, or at all.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We are headquartered in San Jose, California and our primary warehouse is located in Malaysia. We conduct our administration, manufacturing, research and development, sales and marketing in both owned and leased facilities. We believe that our owned and leased facilities are adequate for our present operations. We do not identify or allocate assets by operating segment.

As of October 31, 2021, our owned and leased facilities in excess of 100,000 square feet consisted of:

(In square feet)	United States	Other Countries	Total
Owned facilities [1]	2,477,165	928,888	3,406,053
Leased facilities [2]	901,198	1,309,369	2,210,567
Total facilities	3,378,363	2,238,257	5,616,620

[1] Includes 318,000 square feet and 153,000 square feet of property owned in Malaysia subject to a 60-year land lease with the state authority expiring in May 2051 and March 2077, respectively, subject to renewal at our option.

[2] Building leases expire on varying dates through February 2046 and generally include renewals at our option.

ITEM 3. LEGAL PROCEEDINGS

The information set forth under Note 14. “Commitments and Contingencies” included in Part II, Item 8. of this Annual Report on Form 10-K, is incorporated herein by reference. For an additional discussion of certain risks associated with legal proceedings, see “Risk Factors” above.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Broadcom common stock is listed on The Nasdaq Global Select Market under the symbol “AVGO”.

Holders

As of November 26, 2021, there were 971 holders of record of our common stock. A substantially greater number of stockholders are “street name” or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

Issuer Purchases of Equity Securities

During the fiscal quarter ended October 31, 2021, we paid approximately $266 million in employee withholding taxes due upon the vesting of net settled equity awards. We withheld approximately 1 million shares of common stock from employees in connection with such net share settlement at an average price of $505.59 per share. These shares may be deemed to be “issuer purchases” of shares.

In December 2021, our Board of Directors authorized a stock repurchase program to repurchase up to $10 billion of our common stock from time to time on or prior to December 31, 2022. Repurchases under our stock repurchase program may be effected through a variety of methods, including open market or privately negotiated purchases. The timing and amount of shares repurchased will depend on the stock price, business and market conditions, corporate and regulatory requirements, alternative investment opportunities, acquisition opportunities and other factors. We are not obligated to repurchase any specific amount of shares of common stock, and the stock repurchase program may be suspended or terminated at any time.

Stock Performance Graph

The following graph shows a comparison of cumulative total return for our common stock, the Standard & Poor’s 500 Stock Index (the “S&P 500 Index”) and the NASDAQ 100 Index for the five fiscal years ended October 31, 2021. The total return graph and table assume that $100 was invested on October 28, 2016 (the last trading day of our fiscal year 2016) in each of Broadcom Inc. common stock, the S&P 500 Index and the NASDAQ 100 Index and assume that all dividends are reinvested. Indexes are calculated on a month-end basis.

The comparisons in the graph below are based on historical data and are not indicative of, or intended to forecast, the possible future performance of our common stock.

Comparison of Five Year Cumulative Total Return

Among Broadcom Inc., the S&P 500 Index and the NASDAQ 100 Index

avgo-20211031_g1.jpg

	October 30, 2016	October 29, 2017	November 4, 2018	November 3, 2019	November 1, 2020	October 31, 2021
Broadcom Inc.	$ 100.00	$ 152.15	$ 136.54	$ 190.64	$ 235.49	$ 369.32
S&P 500 Index	$ 100.00	$ 123.88	$ 133.27	$ 153.19	$ 166.44	$ 237.87
NASDAQ 100 Index	$ 100.00	$ 130.81	$ 148.20	$ 175.60	$ 240.06	$ 346.72

The graph and the table above shall not be deemed "filed" with the SEC for the purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing made by us with the SEC, regardless of any general incorporation language in such filing.

ITEM 6. [RESERVED]

Table of Contents

ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Management’s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our consolidated financial statements and notes thereto, which appear elsewhere in this Annual Report on Form 10-K. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under the caption “Risk Factors” or in other parts of this Annual Report on Form 10-K.

The following section generally discusses our financial condition and results of operations for our fiscal year ended October 31, 2021 (“fiscal year 2021”) compared to our fiscal year ended November 1, 2020 (“fiscal year 2020”). A discussion regarding our financial condition and results of operations for fiscal year 2020 compared to our fiscal year ended November 3, 2019 (“fiscal year 2019”) can be found in Part II, Item 7 of our Annual Report on Form 10-K for fiscal year 2020, filed with the Securities and Exchange Commission (the “SEC”) on December 18, 2020.

Overview

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Our infrastructure software solutions enable customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. Our portfolio of industry-leading infrastructure and security software is designed to modernize, optimize, and secure the most complex hybrid environments, enabling scalability, agility, automation, insights, resiliency and security. We also offer mission critical fibre channel storage area networking (“FC SAN”) products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products.

We have two reportable segments: semiconductor solutions and infrastructure software, as a result of a change in our organizational structure during fiscal year 2020. Our semiconductor solutions segment includes all of our product lines and intellectual property (“IP”) licensing. Our infrastructure software segment includes our mainframe, distributed and cyber security solutions, and our FC SAN business. During fiscal year 2020, we refined our allocation methodology for certain selling, general and administrative expenses to more closely align these costs with the segment benefiting from the shared expenses.

Our strategy is to combine best-of-breed technology leadership in semiconductor and infrastructure software solutions, with unmatched scale, on a common sales and administrative platform to deliver a comprehensive suite of infrastructure technology products to the world’s leading business and government customers. We seek to achieve this through responsibly financed acquisitions of category-leading businesses and technologies, as well as investing extensively in research and development, to ensure our products retain their technology leadership. This strategy results in a robust business model designed to drive diversified and sustainable operating and financial results.

The demand for our products has been affected in the past, and is likely to continue to be affected in the future, by various factors, including the following:

- gain or loss of significant customers;

- general economic and market conditions in the industries and markets in which we compete;
- our distributors’ product inventory and end customer demand;
- the rate at which our present and future customers and end-users adopt our products and technologies in our target markets, and the rate at which our customers' products that include our technology are accepted in their markets;
- the shift to cloud-based information technology solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers; and
- the timing, rescheduling or cancellation of expected customer orders.

COVID-19 Update

In response to the ongoing COVID-19 pandemic and the various resulting government directives, we have taken extensive measures to protect the health and safety of our employees and contractors at our facilities. We modified our workplace practices globally, which resulted in some of our employees working remotely for an extended period of time and some of whom are still working remotely. While we have implemented personal safety measures at all of our facilities where our employees are working on site, we may need to modify our business practices and policies. We continue to monitor the implications of the COVID-19 pandemic on our business, as well as our customers' and suppliers' businesses.

The demand environment for our semiconductor products was consistent with our expectations for the fourth quarter of fiscal year 2021, with continued demand for products and infrastructure as customers invest in technologies to support remote or hybrid tele-work and learning arising from COVID-19, as well as the transition to office re-openings. While we continue to see robust demand in this area and record profitability driven by the supply imbalance, the macroeconomic environment remains uncertain and it may not be sustainable over the longer term. We continue to experience various constraints in our supply chain due to the pandemic, including with respect to wafers and substrates. While supply lead times have stabilized, we continue to have difficulties in obtaining some necessary components and inputs in a timely manner to meet increased demand. To date, the impact of COVID-19 on the demand environment for our software products has been limited.

We have also taken various actions to de-risk our business in light of the ongoing uncertainty and strengthen our balance sheet, including closely managing working capital and our debt instruments.

Overall, in light of the changing nature and continuing uncertainty around the COVID-19 pandemic, our ability to predict the impact of COVID-19 on our business in future periods remains limited. The effects of the pandemic on our business are unlikely to be fully realized, or reflected in our financial results, until future periods.

Fiscal Year Highlights

Highlights during fiscal year 2021 include the following:

- We generated $13,764 million of cash from operations.
- We paid $6,212 million in cash dividends.

Acquisitions and Divestitures

The discussion and analysis in this section and the accompanying consolidated financial statements include the results of operations of acquired companies commencing on their respective acquisition dates.

Acquisition of Symantec Corporation Enterprise Security Business

On November 4, 2019, we purchased and assumed certain assets and certain liabilities, respectively, of the Symantec Corporation Enterprise Security business (the "Symantec Business") for $10.7 billion in cash. We financed this acquisition with the net proceeds from the borrowings under the November 2019 Term Loans, as defined in Note 10. "Borrowings" included in Part II, Item 8 of this Annual Report on Form 10-K.

Acquisition of CA, Inc.

On November 5, 2018, we acquired CA, Inc. ("CA") for $18.8 billion in aggregate cash purchase consideration and assumed $2.25 billion of outstanding unsecured bonds. We financed the acquisition of CA with $18 billion of term loans, as well as cash on hand of the combined companies. We also assumed all eligible unvested CA equity awards in the transaction. On December 31, 2018, we sold Veracode, Inc., a subsidiary of CA and provider of application security testing solutions, to Thoma Bravo, LLC for cash consideration of $950 million, before working capital adjustments.

Net Revenue

A majority of our net revenue is derived from sales of a broad range of semiconductor devices that are incorporated into electronic products, as well as from modules, switches and subsystems. Net revenue is also generated from the sale of software solutions that enable our customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms.

Our overall net revenue, as well as the percentage of total net revenue generated by sales in our semiconductor solutions and infrastructure software segments, have varied from quarter to quarter, due largely to fluctuations in end-market demand, including the effects of seasonality, which are discussed in detail in Part I, Item 1. *Business* under "Seasonality" of this Annual Report on Form 10-K.

Original equipment manufacturers ("OEMs"), or their contract manufacturers, and distributors, typically account for the substantial majority of our semiconductor sales. To serve customers around the world, we have strategically developed relationships with large global electronic component distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges. We have established strong relationships with leading OEM customers across multiple target markets. Our direct sales force focuses on supporting our large OEM customers and has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer's organization. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers. Many of our major customer relationships have been in place for many years and are often the result of years of collaborative product development. This has enabled us to build our extensive IP portfolio and develop critical expertise regarding our customers' requirements, including substantial system-level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. We recognize revenue upon the delivery of our products to the distributors, which can cause our quarterly net revenue to fluctuate significantly. Such revenue is reduced for estimated returns and distributor allowances.

Our software customers generally consist of large enterprises that have computing environments from multiple vendors and are highly complex. We believe our enterprise-wide license model will continue to offer our customers reduced complexity, more flexibility and an easier renewal process that will help drive revenue growth.

Costs and Expenses

Cost of products sold. Cost of products sold consists primarily of the costs for semiconductor wafers and other materials, as well as the costs of assembling and testing those products and materials. Such costs include personnel and overhead related to our manufacturing operations, which include stock-based compensation expense; related occupancy; computer services; equipment costs; manufacturing quality; order fulfillment; warranty adjustments; inventory adjustments, including write-downs for inventory obsolescence; and acquisition costs, which include direct transaction costs and acquisition-related costs.

Although we outsource a significant portion of our manufacturing activities, we do have some proprietary semiconductor fabrication facilities. If we are unable to utilize our owned fabrication facilities at a desired level, the fixed costs associated with these facilities will not be fully absorbed, resulting in higher average unit costs and lower gross margins.

Cost of subscriptions and services. Cost of subscriptions and services consists of personnel, project costs associated with professional services or support of our subscriptions and services revenue, and allocated facilities costs and other corporate expenses. Personnel costs include stock-based compensation expense.

Total cost of revenue also includes amortization of acquisition-related intangible assets and restructuring charges.

Research and development. Research and development expense consists primarily of personnel costs for our engineers engaged in the design and development of our products and technologies, including stock-based compensation expense. These expenses also include project material costs, third-party fees paid to consultants, prototype development expense, allocated facilities costs and other corporate expenses and computer services costs related to supporting computer tools used in the engineering and design process.

Selling, general and administrative. Selling expense consists primarily of compensation and associated costs for sales and marketing personnel, including stock-based compensation expense, sales commissions paid to our independent sales representatives, advertising costs, trade shows, corporate marketing, promotion, travel related to our sales and marketing operations, related occupancy and equipment costs, and other marketing costs. General and administrative expense consists primarily of compensation and associated costs for executive management, finance, human resources and other administrative personnel, including stock-based compensation expense, outside professional fees, allocated facilities costs, acquisition-related costs and other corporate expenses.

Amortization of acquisition-related intangible assets. In connection with our acquisitions, we recognize intangible assets that are being amortized over their estimated useful lives. We also recognize goodwill, which is not amortized, and in-process research and development ("IPR&D"), which is initially capitalized as an indefinite-lived intangible asset, in connection with the acquisitions. Upon completion of each underlying project, IPR&D assets are reclassified as amortizable purchased intangible assets and amortized over their estimated useful lives.

Restructuring, impairment and disposal charges. Restructuring, impairment and disposal charges consist primarily of compensation costs associated with employee exit programs, alignment of our global manufacturing operations, rationalizing product development program costs, facility and lease abandonments, fixed asset impairment, IPR&D impairment, and other exit costs, including curtailment of service or supply agreements.

Interest expense. Interest expense includes coupon interest, commitment fees, accretion of original issue discount, amortization of debt premiums and debt issuance costs, and expenses related to debt modifications or extinguishments.

Other income, net. Other income, net includes interest income, gains or losses on investments, foreign currency remeasurement, and other miscellaneous items.

Provision for (benefit from) income taxes. We have structured our operations to maximize the benefit from tax incentives extended to us in various jurisdictions to encourage investment or employment. Our tax incentives from the Singapore Economic Development Board provide that any qualifying income earned in Singapore is subject to tax incentives or reduced rates of Singapore income tax. Subject to our compliance with the conditions specified in these incentives and legislative developments, these Singapore tax incentives are presently expected to expire in November 2025. The corporate income tax rate in Singapore that would otherwise apply to us would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028.

Each tax incentive and tax holiday is also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with any such operating conditions specified, we could, in some instances, be required to refund previously realized material tax benefits, or if such tax incentive or tax holiday is terminated prior to its expiration absent a new incentive applying, we will lose the related tax benefits earlier than scheduled. We may elect to modify our operational structure and tax strategy, which may not be as beneficial to us as the benefits provided under the present tax concession arrangements. Before taking into consideration the effects of the U.S. Tax Cuts and Jobs Act and other indirect tax impacts, the effect of these tax incentives and tax holiday was to decrease the provision for income taxes by approximately $1,156 million for fiscal year 2021 and increase the benefit from income taxes by approximately $833 million for fiscal year 2020.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded, we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows. In addition, taxable income in any jurisdiction is dependent upon acceptance of our operational practices and intercompany transfer pricing by local tax authorities as being on an arm’s length basis. Due to inconsistencies in application of the arm’s length standard among taxing authorities, as well as lack of adequate treaty-based protection, transfer pricing challenges by tax authorities could, if successful, substantially increase our income tax expense.

Critical Accounting Estimates

The preparation of financial statements in accordance with generally accepted accounting principles in the United States (“GAAP”) requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. We base our estimates and assumptions on current facts, historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the accrual of costs and expenses that are not readily apparent from other sources. Our actual financial results may differ materially and adversely from our estimates. Our critical accounting policies are those that affect our historical financial statements materially and involve difficult, subjective or complex judgments by management. Those policies include revenue recognition, business combinations, valuation of goodwill and long-lived assets, inventory valuation, income taxes, retirement and post-retirement benefit plan assumptions, stock-based compensation and employee bonus programs. See Note 2. “Summary of Significant Accounting Policies” included in Part II, Item 8. of this Annual Report on Form 10-K for further information on our critical accounting policies and estimates.

Revenue recognition. We account for a contract with a customer when both parties have approved the contract and are committed to perform their respective obligations, each party’s rights can be identified, payment terms can be identified, the contract has commercial substance, and it is probable we will collect substantially all of the consideration we are entitled to. Revenue is recognized when, or as, performance obligations are satisfied by transferring control of a promised product or service to a customer. Our products and services can be broadly categorized as sales of products and subscriptions and services.

We recognize products revenue from sales to direct customers and distributors when control transfers to the customer. An allowance for distributor credits covering price adjustments is made based on our estimate of historical experience rates as well as considering economic conditions and contractual terms. To date, actual distributor claims activity has been materially consistent with the provisions we have made based on our historical estimates. However, because of the inherent nature of estimates, there is always a risk that there could be significant differences between actual amounts and our estimates. Different judgments or estimates could result in variances that might be significant to reported operating results. We also record reductions of revenue for rebates in the same period that the related revenue is recorded. We accrue 100% of potential rebates at the time of sale. We reverse the accrual of unclaimed rebate amounts as specific rebate programs contractually end and when we believe unclaimed rebates are no longer subject to payment and will not be paid. Thus, the reversal of unclaimed rebates may have a positive impact on our net revenue and net income in subsequent periods.

Our contracts may contain more than one of our products and services, each of which is separately accounted for as a distinct performance obligation. When available, we use directly observable transactions to determine the standalone selling prices for performance obligations. Our estimates of standalone selling price for each performance obligation require judgment that considers multiple factors, including, but not limited to, historical discounting trends for products and services and pricing practices through different sales channels, gross margin objectives, internal costs, competitor pricing strategies, technology lifecycles and market conditions.

We also estimate the standalone selling price of our material rights. Our estimate of the value of the customer's option to purchase or receive additional products or services at a discounted price includes estimating the incremental discount the customer would obtain when exercising the option and the likelihood that the option would be exercised.

Certain contracts contain a right of return that allows the customer to cancel all or a portion of the product or service and receive a credit. We estimate returns based on historical returns data which is constrained to an amount for which a material revenue reversal is not probable. We do not recognize revenue for products or services that are expected to be returned.

Business combinations. Accounting for business combinations requires management to make significant estimates and assumptions, especially at the acquisition date, for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain of the intangible assets we have acquired include, but are not limited to, future expected cash flows from product sales, customer contracts and acquired technologies, revenue growth rate, customer ramp-up period, technology obsolescence rates, expected costs to develop IPR&D into commercially viable products, estimated cash flows from the projects when completed, and discount rates. The discount rates used to discount expected future cash flows to present value are typically derived from a weighted-average cost of capital analysis and adjusted to reflect inherent risks. Unanticipated events and circumstances may occur that could affect either the accuracy or validity of such assumptions, estimates or actual results.

Valuation of goodwill and long-lived assets. We perform an annual impairment review of our goodwill during the fourth fiscal quarter of each year, and more frequently if we believe indicators of impairment exist. The process of evaluating the potential impairment of goodwill is highly subjective and requires significant judgment. To review for impairment, we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. These factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit's net book value.

Determining the fair value of a reporting unit involves the use of significant estimates and assumptions. Our goodwill impairment test uses both the income approach and the market approach to estimate a reporting unit's fair value. The income approach is based on the discounted cash flow method that uses the reporting unit estimates for forecasted future financial performance including revenues, operating expenses, and taxes, as well as working capital and capital asset requirements. These estimates are developed as part of our long-term planning process based on assumed market segment growth rates and our assumed market segment share, estimated costs based on historical data and various internal estimates. Projected cash flows are then discounted to a present value employing a discount rate that properly accounts for the estimated market weighted-average cost of capital, as well as any risk unique to the subject cash flows. The market approach is based on weighting financial multiples of comparable companies and applies a control premium. A reporting unit's carrying value represents the assignment of various assets and liabilities, excluding certain corporate assets and liabilities, such as cash and debt.

We assess the impairment of long-lived assets including purchased IPR&D, property, plant and equipment, and intangible assets, whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, or (iii) significant negative industry or economic trends. The process of evaluating the potential impairment of long-lived assets under the accounting guidance on property, plant and equipment and other intangible assets is also highly subjective and requires significant judgment. In order to estimate the fair value of long-lived assets, we typically make various assumptions about the future prospects of our business or the part of our business that the long-lived asset relates to. We also consider market factors specific to the business and estimate future cash flows to be generated by the business, which requires significant judgment as it is based on assumptions about market demand for our products over a number of future years. Based on these assumptions and estimates, we determine whether we need to take an impairment charge to reduce the value of the long-lived asset stated on our consolidated balance sheets to reflect its estimated fair value. Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors, such as the real estate market, industry and economic trends, and internal factors, such as changes in our business strategy and our internal forecasts. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, changes in assumptions and estimates could materially impact our reported financial results.

Inventory valuation. We regularly review inventory quantities on hand and record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. Demand for our products can fluctuate significantly from period to period. A significant decrease in demand could result in an increase in the amount of excess inventory quantities on hand. In addition, our industry is characterized by rapid technological change, frequent new product development and rapid product obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Additionally, our estimates of future product demand may prove to be inaccurate, which may cause us to understate or overstate both the provision required for excess and obsolete inventory and cost of products sold. Therefore, although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our results of operations.

Income taxes. Significant management judgment is required in developing our provision for or benefit from income taxes, including the determination of deferred tax assets and liabilities and any valuation allowances that might be required against the deferred tax assets. We have considered projected future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for valuation allowances. An adjustment to the valuation allowance will either increase or decrease our provision for or benefit from income taxes in the period such determination is made. In evaluating the exposure associated with various tax filing positions, we accrue an income tax liability when such positions do not meet the more likely than not threshold for recognition.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax law and regulations in a multitude of jurisdictions. We recognize potential liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on our estimate of whether, and the extent to which, additional taxes, interest, and penalties will be due. If our estimate of income tax liabilities proves to be less than the actual amount ultimately assessed, a further charge to tax expense would be required. If the payment of these amounts ultimately proves to be unnecessary, the reversal of the accrued liabilities would result in tax benefits being recognized in the period when we determine the liabilities no longer exist.

Retirement and post-retirement benefit plan assumptions. Retirement and post-retirement benefit plan obligations represent liabilities that will ultimately be settled sometime in the future and therefore, are subject to estimation. Pension accounting is intended to reflect the recognition of future retirement and post-retirement benefit plan costs over the employees' average expected future service to us, based on the terms of the plans and investment and funding decisions. To estimate the impact of these future payments and our decisions concerning funding of these obligations, we are required to make assumptions using actuarial concepts within the framework of GAAP. One assumption is the discount rate used to calculate the estimated plan obligations. Other assumptions include the expected long-term return on plan assets, expected future salary increases, the health care cost trend rate, expected future increases to benefit payments, expected retirement dates, employee turnover, retiree mortality rates, and portfolio composition. We evaluate these assumptions at least annually.

For our U.S. and non-U.S. plans, we use October 31, the month end closest to our fiscal year end, as the annual discount rate measurement date to determine the present value of future benefit payments. The U.S. discount rates are based on the results of matching expected plan benefit payments with cash flows from a hypothetical yield curve constructed with high-quality corporate bond yields. The discount rate for non-U.S. plans was based either on published rates for government bonds or use of a hypothetical yield curve constructed with high-quality corporate bond yields, depending on the availability of sufficient quantities of quality corporate bonds. Lower discount rates increase present values of the pension liabilities and subsequent year pension expense; higher discount rates decrease present values of the pension liabilities and subsequent year pension expense.

The U.S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy.

Actuarial assumptions are based on our best estimates and judgment. Material changes may occur in retirement benefit costs in the future if these assumptions differ from actual events or experiences. We performed a sensitivity analysis on the discount rate, which is the key assumption in calculating the U.S. pension and post-retirement benefit obligations. Each change of 25 basis points in the discount rate assumption would have had an estimated $36 million impact on the benefit obligations as of the fiscal year 2021 measurement date. Each change of 25 basis points in the discount rate assumption or expected rate of return assumption would not have a material impact on annual net retirement benefit costs for the fiscal year ending October 30, 2022 (“fiscal year 2022”).

Stock-based compensation expense. Stock-based compensation expense consists of expense for restricted stock units ("RSUs") and stock options granted to employees and non-employees or assumed from acquisitions as well as expense associated with Broadcom employee stock purchase plan ("ESPP"). We recognize compensation expense for time-based stock options and ESPP rights based on the estimated grant-date fair value method required under the authoritative guidance using the Black-Scholes valuation model.

Certain equity awards include both time-based and market-based conditions and are accounted for as market-based awards. The fair value of these market-based awards is estimated on the date of grant using a Monte Carlo simulation model.

Employee Bonus Programs. Our employee bonus programs, which are overseen by our Compensation Committee, or our Board, in the case of our Chief Executive Officer, provide for variable compensation based on the attainment of overall corporate annual targets and functional performance metrics. At the end of each fiscal quarter, we monitor and accrue for an estimated, variable, proportional compensation expense based on our actual progress toward the achievement of the annual targets and metrics. The actual achievement of target and metrics at the end of the fiscal year, which is subject to approval by our Compensation Committee, may result in the actual variable compensation amounts being significantly higher or lower than the relevant estimated amounts accrued in earlier quarters, which would result in a corresponding adjustment in the fourth fiscal quarter.

Fiscal Year Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal years 2021, 2020 and 2019 consisted of 52 weeks.

The financial statements included in Part II, Item 8. of this Annual Report on Form 10-K are presented in accordance with GAAP and expressed in U.S. dollars.

Results of Operations

Fiscal Year 2021 Compared to Fiscal Year 2020

The following table sets forth our results of operations for the periods presented:

	Fiscal Year Ended			
	October 31, 2021	November 1, 2020	October 31, 2021	November 1, 2020
	(In millions)		(As a percentage of net revenue)	
Statements of Operations Data:				
Net revenue:				
Products	$ 20,886	$ 17,435	76 %	73 %
Subscriptions and services	6,564	6,453	24	27
Total net revenue	27,450	23,888	100	100
Cost of revenue:				
Cost of products sold	6,555	5,892	24	25
Cost of subscriptions and services	607	626	2	2
Amortization of acquisition-related intangible assets	3,427	3,819	13	16
Restructuring charges	17	35	—	—
Total cost of revenue	10,606	10,372	39	43
Gross margin	16,844	13,516	61	57
Research and development	4,854	4,968	18	21
Selling, general and administrative	1,347	1,935	5	8
Amortization of acquisition-related intangible assets	1,976	2,401	7	10
Restructuring, impairment and disposal charges	148	198	—	1
Total operating expenses	8,325	9,502	30	40
Operating income	$ 8,519	$ 4,014	31 %	17 %

Net Revenue

A relatively small number of customers account for a significant portion of our net revenue. Sales of products to distributors accounted for 53% and 42% of our net revenue for fiscal years 2021 and 2020, respectively. Direct sales to WT Microelectronics Co., Ltd., a distributor, accounted for 18% and 13% of our net revenue for fiscal years 2021 and 2020, respectively. We believe aggregate sales to our top five end customers, through all channels, accounted for more than 35% and 30% of our net revenue for fiscal years 2021 and 2020, respectively. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 20% and 15% of our net revenue for fiscal years 2021 and 2020, respectively. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

From time to time, some of our key semiconductor customers place large orders or delay orders, causing our quarterly net revenue to fluctuate significantly. This is particularly true of our wireless products as fluctuations may be magnified by the timing of launches, and seasonal variations in sales, of mobile handsets. The ongoing COVID-19 pandemic and related uncertainties and supply imbalance have caused and may continue to cause our net revenue to fluctuate significantly and impact our results of operations, as discussed above. Additionally, export restrictions on one of our larger customers have had, and may continue to have, an adverse impact on our revenue.

Although we recognize revenue for the majority of our products when title and control transfer in Penang, Malaysia, we disclose net revenue by country based primarily on the geographic shipment or delivery location specified by our distributors, OEMs, contract manufacturers, channel partners, or software customers. In each of fiscal years 2021 and 2020, approximately 35% of our net revenue came from shipments or deliveries to China (including Hong Kong). However, the end customers for either our products or for the end products into which our products are incorporated, are frequently located in countries other than China (including Hong Kong). As a result, we believe that a substantially smaller percentage of our net revenue is ultimately dependent on sales of either our product or our customers' product incorporating our product, to end customers located in China (including Hong Kong).

The following tables set forth net revenue by segment for the periods presented:

Net Revenue by Segment	Fiscal Year Ended October 31, 2021	Fiscal Year Ended November 1, 2020	$ Change	% Change
	(In millions, except for percentages)			
Semiconductor solutions	$ 20,383	$ 17,267	$ 3,116	18 %
Infrastructure software	7,067	6,621	446	7 %
Total net revenue	$ 27,450	$ 23,888	$ 3,562	15 %

Net Revenue by Segment	Fiscal Year Ended October 31, 2021	Fiscal Year Ended November 1, 2020
	(As a percentage of net revenue)	
Semiconductor solutions	74 %	72 %
Infrastructure software	26	28
Total net revenue	100 %	100 %

Net revenue from our semiconductor solutions segment increased primarily due to higher demand for our wireless products, as well as the delayed production ramp of a new mobile handset by a major customer in the prior fiscal year, which resulted in lower shipments in fiscal year 2020. Net revenue from our semiconductor solutions segment also increased due to higher demand for our networking and wireless connectivity products. Net revenue from our infrastructure software segment increased primarily due to higher demand for our FC SAN products, mainframe and cyber security solutions.

Gross Margin

Gross margin was $16,844 million, or 61% of net revenue, for fiscal year 2021, compared to $13,516 million, or 57% of net revenue, for fiscal year 2020. The increase was primarily due to lower amortization of acquisition-related intangible assets and favorable margin within our semiconductor solutions segment due to increased demand.

Research and Development Expense

Research and development expense decreased $114 million, or 2%, in fiscal year 2021, compared to the prior fiscal year. The decrease was primarily due to lower stock-based compensation expense reflecting the full vesting of certain equity awards and the effects of forfeitures, partially offset by higher variable employee compensation expense.

Selling, General and Administrative Expense

Selling, general and administrative expense decreased $588 million, or 30%, in fiscal year 2021, compared to the prior fiscal year. The decrease was primarily due to higher acquisition-related costs incurred in the prior fiscal year as a result of our acquisition of the Symantec Business. The decrease was also due to lower compensation expense reflecting the full benefit of the completed Symantec Business integration as well as our strategic workforce alignment. In addition, fiscal year 2020 included non-recurring litigation settlements.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets recognized in operating expenses decreased $425 million, or 18%, in fiscal year 2021, compared to the prior fiscal year. The decrease was primarily due to lower amortization of certain intangible assets from our acquisition of CA.

Restructuring, Impairment and Disposal Charges

Restructuring, impairment and disposal charges recognized in operating expenses decreased $50 million, or 25%, in fiscal year 2021, compared to the prior fiscal year. The decrease was primarily due to higher employee termination costs in the prior fiscal year from cost reduction activities related to our acquisition of the Symantec Business.

Stock-Based Compensation Expense

Total stock-based compensation expense was $1,704 million and $1,976 million for fiscal years 2021 and 2020, respectively. The decrease primarily reflects the full vesting of certain equity awards and the effect of forfeitures.

The following table sets forth the total unrecognized compensation cost related to unvested stock-based awards outstanding and expected to vest as of October 31, 2021, which we expect to recognize over the remaining weighted-average service period of 2.9 years.

Fiscal Year:	Unrecognized Compensation Cost, Net of Expected Forfeitures
	(In millions)
2022	$ 1,289
2023	907
2024	535
2025	210
2026	26
Total	$ 2,967

During the first quarter of fiscal year 2019, our Compensation Committee approved a broad-based program of multi-year equity grants of time- and market-based RSUs (the "Multi-Year Equity Awards") in lieu of our annual employee equity awards historically granted on March 15 of each year. Each Multi-Year Equity Award vests on the same basis as four annual grants made March 15 of each year, beginning in fiscal year 2019, with successive four-year vesting periods. We recognize stock-based compensation expense related to the Multi-Year Equity Awards from the grant date through their respective vesting date, ranging from 4 years to 7 years.

Segment Operating Results

Operating Income by Segment	Fiscal Year Ended October 31, 2021	Fiscal Year Ended November 1, 2020	$ Change	% Change
	(In millions, except for percentages)			
Semiconductor solutions	$ 10,976	$ 8,576	$ 2,400	28 %
Infrastructure software	4,936	4,363	573	13 %
Unallocated expenses	(7,393)	(8,925)	1,532	(17)%
Total operating income	$ 8,519	$ 4,014	$ 4,505	112 %

Operating income from our semiconductor solutions segment increased primarily due to higher demand for our wireless products, as well as the delayed production ramp of a new mobile handset by a major customer in the prior fiscal year, which resulted in lower shipments in fiscal year 2020. Operating income from our semiconductor solutions segment also increased due to higher demand for our networking and wireless connectivity products, as well as higher gross margin. Operating income from our infrastructure software segment increased primarily due to higher demand for our FC SAN products and mainframe solutions.

Unallocated expenses include amortization of acquisition-related intangible assets; stock-based compensation expense; restructuring, impairment and disposal charges; acquisition-related costs; and other costs that are not used in evaluating the results of, or in allocating resources to, our segments. Unallocated expenses decreased 17% in fiscal year 2021, compared to the prior fiscal year, primarily due to lower amortization of acquisition-related intangible assets, acquisition-related costs and stock-based compensation expense.

Non-Operating Income and Expenses

Interest expense. Interest expense was $1,885 million and $1,777 million for fiscal years 2021 and 2020, respectively. The increase was primarily due to higher losses on extinguishment of debt as a result of our fiscal year 2021 debt transactions.

Other income, net. Other income, net, which includes interest income, gains or losses on investments, foreign currency remeasurement and other miscellaneous items, was $131 million and $206 million for fiscal years 2021 and 2020, respectively. The decrease was primarily due to a $116 million non-recurring gain from the lapse of a tax indemnification arrangement included in the prior fiscal year, offset in part by an increase in gains on investments in fiscal year 2021.

Provision for (benefit from) income taxes. The provision for income taxes of $29 million in fiscal year 2021 was primarily due to income from continuing operations, offset in part by excess tax benefits from stock-based awards, a benefit from foreign derived intangible income, and the recognition of gross unrecognized tax benefits as a result of lapses of statutes of limitations and audit settlements.

The benefit from income taxes of $518 million in fiscal year 2020 was primarily due to the jurisdictional mix of income and expense, the recognition of gross uncertain tax benefits as a result of lapses of statutes of limitations, the remeasurement of certain foreign deferred tax assets and liabilities, and excess tax benefit from stock-based awards.

Liquidity and Capital Resources

The following section discusses our principal liquidity and capital resources as well as our primary liquidity requirements and uses of cash. Our cash and cash equivalents are maintained in highly liquid investments with remaining maturities of 90 days or less at the time of purchase. We believe our cash equivalents are liquid and accessible.

Our primary sources of liquidity as of October 31, 2021 consisted of: (i) $12,163 million in cash and cash equivalents, (ii) cash we expect to generate from operations and (iii) available capacity under our $7.5 billion unsecured revolving credit facility (the "Revolving Facility"). In addition, we may also generate cash from the sale of assets and debt or equity financing from time to time.

Our short-term and long-term liquidity requirements primarily arise from: (i) business acquisitions and investments we may make from time to time, (ii) working capital requirements, (iii) research and development and capital expenditure needs, (iv) cash dividend payments (if and when declared by our Board of Directors), (v) interest and principal payments related to our outstanding indebtedness, (vi) share repurchases, and (vii) payment of income taxes. Our ability to fund these requirements will depend, in part, on our future cash flows, which are determined by our future operating performance and, therefore, subject to prevailing global macroeconomic conditions and financial, business and other factors, some of which are beyond our control.

We believe that our cash and cash equivalents on hand, cash flows from operations, and the Revolving Facility will provide sufficient liquidity to operate our business and fund our current and assumed obligations for at least the next 12 months. We expect a slight increase in capital expenditures in fiscal year 2022 as compared to fiscal year 2021. For additional information regarding our cash requirement from contractual obligations, indebtedness and lease obligations, see Note 14. "Commitments and Contingencies", Note 10. "Borrowings" and Note 6. "Leases" in Part II, Item 8 of this Annual Report on Form 10-K.

From time to time, we engage in discussions with third parties regarding potential acquisitions of, or investments in, businesses, technologies and product lines. Any such transaction, or evaluation of potential transactions, could require significant use of our cash and cash equivalents, or require us to increase our borrowings to fund such transactions. If we do not have sufficient cash to fund our operations or finance growth opportunities, including acquisitions, or unanticipated capital expenditures, our business and financial condition could suffer. In such circumstances, we may seek to obtain new debt or equity financing. However, we cannot assure you that such additional financing will be available on terms acceptable to us or at all. Our ability to service our senior unsecured notes and any other indebtedness we may incur will depend on our ability to generate cash in the future. We may also elect to sell additional debt or equity securities for reasons other than those specified above.

In addition, we may, at any time and from time to time, seek to retire or purchase our outstanding debt through cash tenders and/or exchanges for equity or debt, in open-market purchases, privately negotiated transactions or otherwise. Such tenders, exchanges or purchases, if any, will be upon such terms and at such prices as we may determine, and will depend on prevailing market conditions, our liquidity requirements, contractual restrictions and other factors. The amounts involved may be material.

Working Capital

Working capital increased to $10,305 million at October 31, 2021 from $5,524 million at November 1, 2020. The increase was attributable to the following:

- Cash and cash equivalents increased to $12,163 million at October 31, 2021 from $7,618 million at November 1, 2020, primarily due to $13,764 million in net cash provided by operating activities and $9,904 million in proceeds from long-term borrowings, partially offset by $11,495 million of payments on debt obligations, $6,212 million of dividend payments and $1,299 million in payments of employee withholding taxes related to net share settled equity awards. See the “Cash Flows” section below for further details.
- Current portion of long-term debt decreased to $290 million at October 31, 2021 from $827 million at November 1, 2020, primarily as a result of our fiscal year 2021 debt transactions.
- Inventory increased to $1,297 million at October 31, 2021 from $1,003 million at November 1, 2020, primarily due to the timing of customer product ramps.

These increases in working capital were offset in part by the following:

- Accounts payable increased to $1,086 million at October 31, 2021 from $836 million at November 1, 2020, primarily due to the timing of vendor payments.
- Accounts receivable decreased to $2,071 million at October 31, 2021 from $2,297 million at November 1, 2020, primarily due to revenue linearity and additional receivables sold through factoring arrangements.
- Employee compensation and benefits increased to $1,066 million at October 31, 2021 from $877 million at November 1, 2020, primarily due to higher variable compensation based on current fiscal year performance.

Capital Returns

Cash Dividends Declared and Paid	Fiscal Year Ended October 31, 2021	Fiscal Year Ended November 1, 2020
	(In millions, except per share data)	
Dividends per share to common stockholders	$ 14.40	$ 13.00
Dividends to common stockholders	$ 5,913	$ 5,235
Dividends per share to preferred stockholders	$ 80.00	$ 80.00
Dividends to preferred stockholders	$ 299	$ 299

During fiscal years 2021 and 2020, we paid approximately $1,299 million and $765 million, respectively, in employee withholding taxes due upon the vesting of net settled equity awards. We withheld approximately 3 million shares of common stock from employees in connection with such net share settlements during each of fiscal years 2021 and 2020.

In December 2021, our Board of Directors authorized a stock repurchase program to repurchase up to $10 billion of our common stock from time to time on or prior to December 31, 2022. Repurchases under our stock repurchase program may be effected through a variety of methods, including open market or privately negotiated purchases. The timing and amount of shares repurchased will depend on the stock price, business and market conditions, corporate and regulatory requirements, alternative investment opportunities, acquisition opportunities, and other factors. We are not obligated to repurchase any specific amount of shares of common stock, and the stock repurchase program may be suspended or terminated at any time.

Cash Flows

	Fiscal Year Ended October 31, 2021	Fiscal Year Ended November 1, 2020
	(In millions)	
Net cash provided by operating activities	$ 13,764	$ 12,061
Net cash used in investing activities	(245)	(11,109)
Net cash provided by (used in) financing activities	(8,974)	1,611
Net change in cash and cash equivalents	$ 4,545	$ 2,563

Operating Activities

Cash provided by operating activities consisted of net income adjusted for certain non-cash and other items and changes in assets and liabilities. The $1,703 million increase in cash provided by operations during fiscal year 2021 compared to fiscal year 2020 was due to

$3,776 million higher net income, offset by a $1,220 million decrease resulting from changes in operating assets and liabilities, as well as a $853 million decrease in amortization of intangible assets, stock-based compensation, and other adjustments.

Investing Activities

Cash flows from investing activities primarily consisted of cash used for acquisitions, capital expenditures and investments, and proceeds from sales of businesses and assets. The $10,864 million decrease in cash used in investing activities for fiscal year 2021 compared to fiscal year 2020 was primarily related to a $10,864 million decrease in cash paid for acquisitions, partially offset by $173 million less in proceeds received from sales of businesses.

Financing Activities

Cash flows from financing activities primarily consisted of net proceeds and payments related to our long-term borrowings, dividend and distribution payments, stock repurchases and the issuances of stock. The $10,585 million decrease in cash related to financing activities for fiscal year 2021 compared to fiscal year 2020 was primarily due to a $9,294 million decrease in net proceeds from borrowings as a result of debt repayments, and a $678 million increase in dividend payments.

Summarized Obligor Group Financial Information

Pursuant to indentures dated January 19, 2017 and October 17, 2017 (collectively, the "2017 Indentures"), Broadcom Cayman Finance Limited (subsequently merged into Broadcom Technologies Inc. ("BTI") during fiscal year 2019 with BTI remaining as the surviving entity) and Broadcom Corporation ("BRCM") (BRCM and BTI collectively, the "2017 Senior Notes Co-Issuers") issued $13,550 million and $4,000 million aggregate principal amount of notes, respectively (collectively, the "2017 Senior Notes"). Substantially all of the 2017 Senior Notes have been registered with the SEC.

We may redeem all or a portion of our 2017 Senior Notes at any time prior to their maturity, subject to a specified make-whole premium as set forth in the 2017 Indentures. In the event of a change of control triggering event, holders of our 2017 Senior Notes will have the right to require us to purchase for cash, all or a portion of their 2017 Senior Notes at a redemption price of 101% of the aggregate principal amount plus accrued and unpaid interest. The 2017 Indentures also contain covenants that restrict, among other things, the ability of Broadcom and its subsidiaries to incur certain secured debt and to consummate certain sale and leaseback transactions and restrict the ability of Broadcom, BRCM and BTI (collectively, the "Obligor Group") to merge, consolidate or sell all or substantially all of their assets.

Broadcom and BTI fully and unconditionally guarantee, jointly and severally, on an unsecured, unsubordinated basis, the 2017 Senior Notes. Because the guarantees are not secured, they are effectively subordinated to any existing and future secured indebtedness of the guarantors to the extent of the value of the collateral securing that indebtedness. The guarantee by Broadcom and BTI will be automatically and unconditionally released upon the sale, exchange, disposition or other transfer of all or substantially all of the assets of such guarantor if any of these events occurs, subject to the terms of the 2017 Indentures. The guarantee by Broadcom (1) will also be automatically and unconditionally released at such time as: (A) the 2017 Senior Notes Co-Issuers, in their sole discretion, determine that such guarantee is no longer required by Rule 3-10(a), as applicable, of Regulation S-X to except the 2017 Senior Notes Co-Issuers' financial statements from being required to be filed pursuant to Rule 3-10(a) of Regulation S-X or otherwise facilitate a reduction in its financial reporting obligations or (B) either of the 2017 Senior Notes Co-Issuers becomes subject to Section 13 or 15(d) of the Securities Exchange Act of 1934 ("Exchange Act") and (2) may, at the election of the 2017 Senior Notes Co-Issuers, be unconditionally released at such time as Broadcom is eligible to suspend its reporting obligation under the Exchange Act.

In March 2021, we completed the settlement of our private offers to exchange $5.5 billion of certain of our outstanding notes maturing between 2024 and 2027 (the "Exchange Offer") for $2,250 million of 3.419% new senior unsecured notes due April 2033 and $3,250 million of 3.469% new senior unsecured notes due April 2034. In connection with the Exchange Offer, BRCM and BTI were automatically and unconditionally released from their guarantees in accordance with the respective indentures governing the January 2021 Senior Notes, the June 2020 Senior Notes, the May 2020 Senior Notes, the April 2020 Senior Notes, and the April 2019 Senior Notes, as defined in Note 10. "Borrowings" included in Part II, Item 8 of this Annual Report on Form 10-K.

The following tables set forth the summarized financial information of the Obligor Group on a combined basis. This summarized financial information excludes any subsidiaries that are not issuers or guarantors (the “Non-Obligor Group”). Intercompany balances and transactions between members of the Obligor Group have been eliminated.

Summarized Balance Sheet Information	October 31, 2021
	(In millions)
ASSETS	
Current assets:	
Amount due from Non-Obligor Group	$ 792
Other current assets	7,418
Total current assets	$ 8,210
Long-term assets:	
Amount due from Non-Obligor Group, long-term	$ 4,620
Goodwill	1,380
Other long-term assets	1,376
Total long-term assets	$ 7,376
LIABILITIES	
Current liabilities:	
Amount due to Non-Obligor Group	$ 7,412
Current portion of long-term debt	264
Other current liabilities	666
Total current liabilities	$ 8,342
Long-term liabilities:	
Amount due to Non-Obligor Group, long-term	$ 7
Long-term debt	38,998
Other long-term liabilities	2,787
Total long-term liabilities	$ 41,792

Summarized Statement of Operations Information	Fiscal Year Ended October 31, 2021
	(In millions)
Intercompany revenue with Non-Obligor Group	$ 1,760
Intercompany gross margin	$ 1,596
Net loss [a]	$ (1,262)

(a) In addition to intercompany gross margin, there were $962 million of intercompany transactions included in net loss.

Accounting Changes and Recent Accounting Standards

For a description of accounting changes and recent accounting standards, including the expected dates of adoption and estimated effects, if any, in our consolidated financial statements, see Note 2. "Summary of Significant Accounting Policies" included in Part II, Item 8. of this Annual Report on Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Exchange Risk

From time to time, we use foreign exchange forward contracts to hedge a portion of our exposures to changes in currency exchange rates, which result from our global operating and financing activities. We do not use derivative financial instruments for trading or speculative purposes. Gains and losses from foreign currency transactions, as well as derivative instruments, were not significant for any period presented in the consolidated financial statements included in this Form 10-K. As of October 31, 2021, we did not have any outstanding foreign exchange forward contracts.

Table of Contents

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

BROADCOM INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Broadcom Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Broadcom Inc. and its subsidiaries (the "Company") as of October 31, 2021 and November 1, 2020, and the related consolidated statements of operations, of comprehensive income, of stockholders' equity and of cash flows for each of the three years in the period ended October 31, 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 October 31, 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 October 31, 2021 and November 1, 2020, and the results of its operations and its cash flows for each of the three years in the period ended October 31, 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 October 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 6 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in fiscal 2020.

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.

Uncertain Tax Positions (UTPs)

As described in Notes 2 and 12 to the consolidated financial statements, the gross unrecognized tax benefits balance was $5,030 million as of October 31, 2021. As management has disclosed, management evaluates the exposure associated with various tax filing positions and accrues an income tax liability when such positions do not meet the more-likely-than-not threshold for recognition. A tax benefit from an UTP may be recognized when it is more likely than not that the position will be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits.

The principal considerations for our determination that performing procedures relating to the UTPs is a critical audit matter are (i) the significant judgment by management when evaluating the technical merits of these tax positions, (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating the technical merits of the tax positions, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

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 identification and recognition of the income tax liability for UTPs, including controls addressing the completeness of the UTPs and the measurement of the income tax liability. These procedures also included, among others, (i) testing management’s process for identifying potential new UTPs, (ii) for a selection of UTPs, evaluating possible outcomes, and (iii) for a selection of UTPs, testing the calculation of the income tax liability by jurisdiction, including management’s assessment of the technical merits of tax positions and estimates of the amount of tax benefit expected to be sustained. Professionals with specialized skill and knowledge were used to assist in (i) the evaluation of the completeness of management’s identification of the UTPs and (ii) for a selection of UTPs, the evaluation of the reasonableness of management’s assessment of whether the tax positions are more-likely-than-not of being sustained, the amount of potential benefit to be realized, and the application of relevant tax laws.

/s/ PricewaterhouseCoopers LLP

San Jose, California
December 17, 2021

We have served as the Company’s auditor since 2006.

BROADCOM INC.
CONSOLIDATED BALANCE SHEETS

	October 31, 2021	November 1, 2020
	(In millions, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 12,163	$ 7,618
Trade accounts receivable, net	2,071	2,297
Inventory	1,297	1,003
Other current assets	1,055	977
Total current assets	16,586	11,895
Long-term assets:		
Property, plant and equipment, net	2,348	2,509
Goodwill	43,450	43,447
Intangible assets, net	11,374	16,782
Other long-term assets	1,812	1,300
Total assets	$ 75,570	$ 75,933
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 1,086	$ 836
Employee compensation and benefits	1,066	877
Current portion of long-term debt	290	827
Other current liabilities	3,839	3,831
Total current liabilities	6,281	6,371
Long-term liabilities:		
Long-term debt	39,440	40,235
Other long-term liabilities	4,860	5,426
Total liabilities	50,581	52,032
Commitments and contingencies (Note 14)		
Preferred stock dividend obligation	27	27
Stockholders’ equity:		
Preferred stock, $0.001 par value; 100 shares authorized; 8.00% Mandatory Convertible Preferred Stock, Series A, 4 shares issued and outstanding; aggregate liquidation value of $3,737 and $3,738 as of October 31, 2021 and November 1, 2020, respectively	—	—
Common stock, $0.001 par value; 2,900 shares authorized; 413 and 407 shares issued and outstanding as of October 31, 2021 and November 1, 2020, respectively	—	—
Additional paid-in capital	24,330	23,982
Retained earnings	748	—
Accumulated other comprehensive loss	(116)	(108)
Total stockholders’ equity	24,962	23,874
Total liabilities and equity	$ 75,570	$ 75,933

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents

BROADCOM INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Fiscal Year Ended		
	October 31, 2021	November 1, 2020	November 3, 2019
	(In millions, except per share data)		
Net revenue:			
Products	$ 20,886	$ 17,435	$ 18,117
Subscriptions and services	6,564	6,453	4,480
Total net revenue	27,450	23,888	22,597
Cost of revenue:			
Cost of products sold	6,555	5,892	6,208
Cost of subscriptions and services	607	626	515
Amortization of acquisition-related intangible assets	3,427	3,819	3,314
Restructuring charges	17	35	77
Total cost of revenue	10,606	10,372	10,114
Gross margin	16,844	13,516	12,483
Research and development	4,854	4,968	4,696
Selling, general and administrative	1,347	1,935	1,709
Amortization of acquisition-related intangible assets	1,976	2,401	1,898
Restructuring, impairment and disposal charges	148	198	736
Total operating expenses	8,325	9,502	9,039
Operating income	8,519	4,014	3,444
Interest expense	(1,885)	(1,777)	(1,444)
Other income, net	131	206	226
Income from continuing operations before income taxes	6,765	2,443	2,226
Provision for (benefit from) income taxes	29	(518)	(510)
Income from continuing operations	6,736	2,961	2,736
Loss from discontinued operations, net of income taxes	—	(1)	(12)
Net income	6,736	2,960	2,724
Dividends on preferred stock	(299)	(297)	(29)
Net income attributable to common stock	$ 6,437	$ 2,663	$ 2,695
Basic income per share attributable to common stock:			
Income per share from continuing operations	$ 15.70	$ 6.62	$ 6.80
Loss per share from discontinued operations	—	—	(0.03)
Net income per share	$ 15.70	$ 6.62	$ 6.77
Diluted income per share attributable to common stock:			
Income per share from continuing operations	$ 15.00	$ 6.33	$ 6.46
Loss per share from discontinued operations	—	—	(0.03)
Net income per share	$ 15.00	$ 6.33	$ 6.43
Weighted-average shares used in per share calculations:			
Basic	410	402	398
Diluted	429	421	419

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Fiscal Year Ended		
	October 31, 2021	November 1, 2020	November 3, 2019
		(In millions)	
Net income	$ 6,736	$ 2,960	$ 2,724
Other comprehensive income (loss), net of tax:			
Change in actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	(8)	24	(24)
Other comprehensive income (loss), net of tax	(8)	24	(24)
Comprehensive income	$ 6,728	$ 2,984	$ 2,700

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Fiscal Year Ended		
	October 31, 2021	November 1, 2020	November 3, 2019
		(In millions)	
Cash flows from operating activities:			
Net income	$ 6,736	$ 2,960	$ 2,724
Adjustments to reconcile net income to net cash provided by operating activities:			
Amortization of intangible and right-of-use assets	5,502	6,335	5,239
Depreciation	539	570	569
Stock-based compensation	1,704	1,976	2,185
Deferred taxes and other non-cash taxes	(809)	(1,142)	(934)
Loss on debt extinguishment	198	169	28
Non-cash restructuring, impairment and disposal charges	38	44	133
Non-cash interest expense	96	108	69
Other	(113)	(52)	(132)
Changes in assets and liabilities, net of acquisitions and disposals:			
Trade accounts receivable, net	210	981	486
Inventory	(294)	(31)	250
Accounts payable	243	(3)	(42)
Employee compensation and benefits	186	217	(294)
Other current assets and current liabilities	(177)	331	(283)
Other long-term assets and long-term liabilities	(295)	(402)	(301)
Net cash provided by operating activities	13,764	12,061	9,697
Cash flows from investing activities:			
Acquisitions of businesses, net of cash acquired	(8)	(10,872)	(16,033)
Proceeds from sales of businesses	45	218	957
Purchases of property, plant and equipment	(443)	(463)	(432)
Proceeds from disposals of property, plant and equipment	4	12	88
Proceeds from sales of investments	169	—	—
Other	(12)	(4)	(2)
Net cash used in investing activities	(245)	(11,109)	(15,422)
Cash flows from financing activities:			
Proceeds from long-term borrowings	9,904	27,802	28,793
Payments on debt obligations	(11,495)	(18,814)	(16,800)
Other borrowings, net	—	(1,285)	1,241
Payment of dividends	(6,212)	(5,534)	(4,235)
Repurchases of common stock - repurchase program	—	—	(5,435)
Shares repurchased for tax withholdings on vesting of equity awards	(1,299)	(765)	(972)
Issuance of preferred stock, net	—	—	3,679
Issuance of common stock	170	276	253
Other	(42)	(69)	(36)
Net cash provided by (used in) financing activities	(8,974)	1,611	6,488
Net change in cash and cash equivalents	4,545	2,563	763
Cash and cash equivalents at beginning of period	7,618	5,055	4,292
Cash and cash equivalents at end of period	$ 12,163	$ 7,618	$ 5,055
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 1,565	$ 1,408	$ 1,287
Cash paid for income taxes	$ 775	$ 501	$ 741

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	8.00% Mandatory Convertible Preferred Stock		Common Stock					
	Shares	Par Value	Shares	Par Value	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
					(In millions)			
Balance as of November 4, 2018	—	$ —	408	$ —	$23,285	$ 3,487	$ (115)	$ 26,657
Net income	—	—	—	—	—	2,724	—	2,724
Other comprehensive loss	—	—	—	—	—	—	(24)	(24)
Cumulative effect of accounting change	—	—	—	—	—	8	(1)	7
Fair value of partially vested equity awards assumed in connection with the acquisition of CA, Inc.	—	—	—	—	67	—	—	67
Dividends to common stockholders	—	—	—	—	(880)	(3,355)	—	(4,235)
Dividends to preferred stockholders	—	—	—	—	(29)	—	—	(29)
Common stock issued	—	—	15	—	253	—	—	253
Preferred stock issued, net	4	—	—	—	3,679	—	—	3,679
Stock-based compensation	—	—	—	—	2,260	—	—	2,260
Repurchases of common stock	—	—	(21)	—	(2,571)	(2,864)	—	(5,435)
Shares repurchased for tax withholdings on vesting of equity awards	—	—	(4)	—	(983)	—	—	(983)
Balance as of November 3, 2019	4	—	398	—	25,081	—	(140)	24,941
Net income	—	—	—	—	—	2,960	—	2,960
Other comprehensive income	—	—	—	—	—	—	24	24
Cumulative effect of accounting change	—	—	—	—	—	(10)	8	(2)
Fair value of partially vested equity awards assumed in connection with an acquisition	—	—	—	—	1	—	—	1
Dividends to common stockholders	—	—	—	—	(2,582)	(2,653)	—	(5,235)
Dividends to preferred stockholders	—	—	—	—	—	(297)	—	(297)
Common stock issued	—	—	12	—	276	—	—	276
Stock-based compensation	—	—	—	—	1,976	—	—	1,976
Shares repurchased for tax withholdings on vesting of equity awards	—	—	(3)	—	(770)	—	—	(770)
Balance as of November 1, 2020	4	—	407	—	23,982	—	(108)	23,874
Net income	—	—	—	—	—	6,736	—	6,736

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Overview and Basis of Presentation

Overview

Broadcom Inc. (“Broadcom”), a Delaware corporation, is a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Our infrastructure software solutions enable customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. Our portfolio of industry-leading infrastructure and security software is designed to modernize, optimize, and secure the most complex hybrid environments, enabling scalability, agility, automation, insights, resiliency and security. We also offer mission critical fibre channel storage area networking (“FC SAN”) products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products. Unless stated otherwise or the context otherwise requires, references to “Broadcom,” “we,” “our,” and “us” mean Broadcom and its consolidated subsidiaries.

Basis of Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal year ended October 31, 2021 (“fiscal year 2021”) was a 52-week fiscal year. The first quarter of our fiscal year 2021 ended on January 31, 2021, the second quarter ended on May 2, 2021 and the third quarter ended on August 1, 2021. Our fiscal year ended November 1, 2020 (“fiscal year 2020”) and fiscal year ended November 3, 2019 (“fiscal year 2019”) were both 52-week fiscal years.

On November 4, 2019, we completed the purchase of certain assets and assumption of certain liabilities of the Symantec Corporation Enterprise Security business (the “Symantec Business”). On November 5, 2018, we acquired CA, Inc. (“CA”). The accompanying consolidated financial statements include the results of operations of the Symantec Business and CA commencing as of their respective acquisition dates. See Note 4. “Acquisitions” for additional information.

Certain reclassifications have been made to the consolidated statement of cash flows for fiscal year 2019. These reclassifications have no impact on previously reported operating, investing or financing cash flows. During the first quarter of fiscal year 2020, we changed our organizational structure, resulting in two reportable segments: semiconductor solutions and infrastructure software. Reclassifications have also been made to segment operating income. Fiscal year 2019 segment results have been recast to conform to the current presentation. See Note 13. “Segment Information” for additional information. These reclassifications have no impact on previously reported consolidated operating income.

The accompanying consolidated financial statements include the accounts of Broadcom and its subsidiaries and have been prepared in accordance with generally accepted accounting principles in the United States (“GAAP”). All intercompany balances and transactions have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Foreign currency remeasurement. We operate in a U.S. dollar functional currency environment. Foreign currency assets and liabilities for monetary accounts are remeasured into U.S. dollars at current exchange rates. Non-monetary items such as inventory and property, plant and equipment, are measured and recorded at historical exchange rates. The effects of foreign currency remeasurement were not material for any period presented.

Use of estimates. The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The inputs into certain of these estimates and assumptions include the consideration of the economic impact of the COVID-19 pandemic. Actual results could differ materially from these estimates, and such differences could affect the results of operations reported in future periods. As the impact of the COVID-19 pandemic continues to develop, many of these estimates could require increased judgment and carry a higher degree of variability and volatility, and may change materially in future periods.

Cash and cash equivalents. We consider all highly liquid investment securities with original maturities of three months or less at the date of purchase to be cash equivalents. We determine the appropriate classification of our cash and cash equivalents at the time of purchase.

Trade accounts receivable, net. Trade accounts receivable are recognized at the invoiced amount and do not bear interest. Accounts receivable are reduced by an allowance for doubtful accounts, which is our best estimate of the expected credit losses in our existing accounts receivable. We determine the allowance based on historical experience, current economic conditions and certain forward-looking information, among other factors. Allowances for doubtful accounts were not material as of October 31, 2021 or November 1, 2020. Accounts receivable are also recognized net of sales returns and distributor credit allowances. These amounts are recognized when it is both probable and estimable that discounts will be granted or products will be returned. Allowances for sales returns and distributor credit allowances as of October 31, 2021 and November 1, 2020 were $129 million and $174 million, respectively.

Concentrations of credit risk and significant customers. Our cash, cash equivalents and accounts receivable are potentially subject to concentration of credit risk. Cash and cash equivalents may be redeemable upon demand and are maintained with financial institutions that management believes are of high credit quality and therefore bear minimal credit risk. We seek to mitigate our credit risks by spreading such risks across multiple counterparties and monitoring the risk profile of these counterparties. Our accounts receivable are derived from revenue earned from customers located both within and outside the U.S. We mitigate collection risks from our customers by performing regular credit evaluations of our customers' financial conditions, and require collateral, such as letters of credit and bank guarantees, in certain circumstances.

Concentration of other risks. We operate in markets that are highly competitive and rapidly changing. Significant technological changes, shifting customer needs, the emergence of competitive products with new capabilities, general economic conditions worldwide, the ability to safeguard patents and other intellectual property ("IP") in a rapidly evolving market and reliance on assembly and test subcontractors, third-party wafer fabricators and independent distributors and other factors could affect our financial results.

Inventory. We value our inventory at the lower of actual cost or net realizable value of the inventory, with cost being determined under the first-in, first-out method. We record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. The excess and obsolete balance determined by this analysis becomes the basis for our excess and obsolete inventory charge and the written-down value of the inventory becomes its new cost basis.

Retirement benefits. For defined benefit pension plans, we consider various factors in determining our respective benefit obligations and net periodic benefit (income) cost, including the number of employees that we expect to receive benefits, their salary levels and years of service, the expected return on plan assets, the discount rate, the timing of the payment of benefits, and other actuarial assumptions. If the actual results and events of the retirement benefit plans differ from our current assumptions, the benefit obligations may be over- or under-valued.

Post-retirement benefit plan assets and obligations are estimates of benefits that we expect to pay to eligible retirees. We consider various factors in determining the value of our post-retirement benefit plan assets and obligations, including the number of employees that we expect to receive benefits and other actuarial assumptions.

The key benefit plan assumptions are the discount rate and the expected rate of return on plan assets. The U.S. discount rates are based on the results of matching expected plan benefit payments with cash flows from a hypothetical yield curve constructed with high-quality corporate bond yields. The U.S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy. For the non-U.S. plans, we set assumptions specific to each country. We have elected to measure defined benefit pension plan and post-retirement benefit plan assets and liabilities as of October 31, which is the month end that is closest to our fiscal year end.

Derivative instruments. We use derivative financial instruments, primarily foreign exchange forward contracts, to manage exposure to foreign exchange risk. Our forward contracts generally mature within three months. We do not use derivative financial instruments for speculative or trading purposes.

Outstanding derivatives are recognized as either assets or liabilities at their fair values based on Level 2 inputs as defined in the fair value hierarchy. The accounting for gains and losses resulting from changes in fair value depends on the use of the derivative and its hedging designation. For derivative instruments designated as fair value hedges, the changes in fair value are recognized in other income, net in the periods of change, and are offset by the changes in fair value of the hedged items. For derivative instruments designated as cash flow hedges, the changes in fair value of the effective portion are initially recognized in other comprehensive income (loss), net of tax in the period of change, and are subsequently reclassified and recognized in the same line item as the hedged item when either the hedged transactions affect earnings or it becomes probable that the hedged transactions will not occur. The changes in the fair value of the ineffective portion of the derivative instruments are recognized in other income, net in the period of change, which have not been material to date. For derivative instruments not designated as hedges, the changes in fair value are recognized in other income, net in the period of change. We did not have any outstanding derivative instruments as of October 31, 2021 or November 1, 2020.

Property, plant and equipment. Property, plant and equipment are stated at cost less accumulated depreciation and amortization. Additions, improvements and major renewals are capitalized, and maintenance, repairs and minor renewals are expensed as incurred. Assets are held in construction in progress until placed in service, upon which date, we begin to depreciate these assets. When assets are retired or disposed of, the assets and related accumulated depreciation and amortization are removed from our property, plant and equipment balances and the resulting gain or loss is reflected in the consolidated statements of operations. Buildings and leasehold improvements are generally depreciated over 15 to 40 years, or over the lease period, whichever is shorter, and machinery and equipment are generally depreciated over 3 to 10 years. We use the straight-line method of depreciation for all property, plant and equipment.

Leases. We determine if an arrangement is a lease, or contains a lease, at the inception of the arrangement and evaluate whether the lease is an operating lease or a finance lease at the commencement date. We recognize right-of-use ("ROU") assets and lease liabilities for operating and finance leases with terms greater than 12 months, and account for the lease and non-lease components as a single component. ROU assets represent our right to use an asset for the lease term, while lease liabilities represent our obligation to make lease payments. Operating and finance lease ROU assets and liabilities are recognized based on the present value of lease payments over the lease term at the lease commencement date. We use the implicit interest rate or, if not readily determinable, our incremental borrowing rate as of the lease commencement date to determine the present value of lease payments. The incremental borrowing rate is based on our unsecured borrowing rate, adjusted for the effects of collateral. Operating and finance lease ROU assets are recognized net of any lease prepayments and incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Operating lease expense is recognized on a straight-line basis over the lease term. Finance lease expense is recognized based on the effective-interest method over the lease term.

Fair value measurement. Fair value is defined as the price that would be received upon sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. A three level hierarchy is applied to prioritize the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

The three levels of the fair value hierarchy under the guidance for fair value measurements are described below:

Level 1 — Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Our Level 1 assets include cash equivalents, banker's acceptances, trading securities investments and investment funds. We measure trading securities investments and investment funds at quoted market prices as they are traded in active markets with sufficient volume and frequency of transactions.

Level 2 — Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. If the asset or liability has a specified contractual term, a Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 — Level 3 inputs are unobservable inputs for the asset or liability in which there is little, if any, market activity for the asset or liability at the measurement date. Level 3 assets and liabilities include investment in equity securities without readily determinable fair values, goodwill, intangible assets, and property, plant and equipment, which are measured at fair value using a discounted cash flow approach when they are impaired. Quantitative information for Level 3 assets and liabilities reviewed at each reporting period includes indicators of significant deterioration in the earnings performance, credit rating, asset quality, business prospects of the investee, and financial indicators of the investee's ability to continue as a going concern.

Business combinations. We account for business combinations under the acquisition method of accounting, which requires us to recognize separately from goodwill the assets acquired and the liabilities assumed at their acquisition date fair values. While we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recognized in our consolidated statements of operations. Accounting for business combinations requires our management to make significant estimates and assumptions, especially at the acquisition date including our estimates for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from the management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain acquired intangible assets under the income approach include growth in future expected cash flows from product sales, customer contracts and acquired technologies, revenue growth rate, customer ramp-up period, technology obsolescence rates, expected costs to develop in-process research and development ("IPR&D") into commercially viable products, estimated cash flows from the projects when completed and discount rates. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates or actual results.

Goodwill. Goodwill represents the excess of purchase price and related costs over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Goodwill is not amortized but is reviewed annually (or more frequently if impairment indicators arise) for impairment. To review for impairment we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit's net book value. If the fair value of the reporting unit is greater than its net book value, there is no impairment. Otherwise, we calculate the implied fair value of goodwill by deducting the fair value of all tangible and intangible assets, excluding goodwill, of the reporting unit from the fair value of the reporting unit. The implied fair value of goodwill is compared to the carrying value of goodwill. If the implied fair value of goodwill is less than the carrying value of goodwill, an impairment loss is recognized equal to the difference. Determining the fair value of a reporting unit involves the use of significant estimates and assumptions.

Long-lived assets. Purchased finite-lived intangible assets are carried at cost less accumulated amortization. Amortization is recognized over the periods during which the intangible assets are expected to contribute to our cash flows. Purchased IPR&D projects are capitalized at fair value as an indefinite-lived intangible asset and assessed for impairment thereafter. Upon completion of each underlying project, IPR&D assets are reclassified as amortizable purchased intangible assets and amortized over their estimated useful lives. If an IPR&D project is abandoned, we recognize the carrying value of the related intangible asset in our consolidated statements of operations in the period it is abandoned. On a quarterly basis, we monitor factors and changes in circumstances that could indicate carrying amounts of long-lived assets, including purchased intangible assets and property, plant and equipment, may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, and (iii) significant negative industry or economic trends. An impairment loss must be measured if the sum of the expected future cash flows (undiscounted and before interest) from the use and eventual disposition of the asset (or asset group) is less than the net book value of the asset (or asset group). The amount of the impairment loss will generally be measured as the difference between the net book value of the asset (or asset group) and the estimated fair value.

Warranty. We accrue for the estimated costs of product warranties at the time revenue is recognized. Product warranty costs are estimated based upon our historical experience and specific identification of the product requirements, which may fluctuate based on product mix. Additionally, we accrue for warranty costs associated with occasional or unanticipated product quality issues if a loss is probable and can be reasonably estimated.

Revenue recognition. We account for a contract with a customer when both parties have approved the contract and are committed to perform their respective obligations, each party's rights can be identified, payment terms can be identified, the contract has commercial substance, and it is probable we will collect substantially all of the consideration we are entitled to. Revenue is recognized when, or as, performance obligations are satisfied by transferring control of a promised product or service to a customer.

Nature of Products and Services

Our products and services can be broadly categorized as sales of products and subscriptions and services. The following is a description of the principal activities from which we generate revenue.

Products. We recognize revenue from sales to direct customers and distributors when control transfers to the customer. Rebates and incentives offered to distributors, which are earned when sales to end customers are completed, are estimated at the point of revenue recognition. We have elected to exclude from the transaction price any taxes collected from a customer and to account for shipping and handling activities performed after a customer obtains control of the product as activities to fulfill the promise to transfer the product. From time to time, certain customers agree to pay us secure supply fees in exchange for prioritized fulfillment of product orders. Such fees are included in the transaction price of the product orders and are recognized as revenue in the period that control over the products is transferred to the customer.

Subscriptions and services. Our subscriptions and services revenue consists of sales and royalties from software arrangements, support services, professional services, transfer of IP, and non-recurring engineering ("NRE") arrangements.

Revenue from software arrangements primarily consists of fees, which may be paid either at contract inception or in installments over the contract term, that provide customers with a right to use the software, access general support and maintenance, and utilize our professional services.

Our software licenses have standalone functionality from which customers derive benefit, and the customer obtains control of the software when it is delivered or made available for download. We believe that for the majority of software arrangements, customers derive significant benefit from the ongoing support we provide. The majority of our subscriptions and services arrangements permit our customers to unilaterally terminate or cancel these arrangements at any time at the customer's convenience, referred to as termination for convenience provisions, without substantive termination penalty and receive a pro-rata refund of any prepaid fees. Accordingly, we account for arrangements with these termination for convenience provisions as a series of daily contracts, resulting in ratable revenue recognition of software revenue over the contractual period.

Support services consist primarily of telephone support and the provision of unspecified updates and upgrades on a when-and-if-available basis. Support services represent stand-ready obligations for which revenue is recognized ratably over the term of the arrangement.

Professional services consist of implementation, consulting, customer education and customer training services. The obligation to provide professional services is generally satisfied over time, with the customer simultaneously receiving and consuming the benefits as we satisfy our performance obligations.

Rights to our IP are either sold or licensed to a customer. IP revenue recognition is dependent on the nature and terms of each agreement. We recognize IP revenue upon delivery of the IP if there are no substantive future obligations to perform under the arrangement. Sales-based or usage-based royalties from the license of IP are recognized at the later of the period the sales or usages occur or the satisfaction of the performance obligation to which some or all of the sales-based or usage-based royalties have been allocated.

There are two main categories of NRE contracts that we enter into with our customers: (a) NRE contracts in which we develop a custom chip and (b) NRE contracts in which we accelerate our development of a new chip upon the customer's request. The majority of our NRE contract revenues meet the over time criteria. As such, revenue is recognized over the development period with the measure of progress using the input method based on costs incurred to total cost ("cost-to-cost") as the services are provided. For NRE contracts that do not meet the over time criteria, revenue is recognized at a point in time when the NRE services are complete.

Material rights. Contracts with customers may also include material rights that are also performance obligations. These include the right to renew or receive products or services at a discounted price in the future. Revenue allocated to material rights is recognized when the customer exercises the right or the right expires.

Arrangements with Multiple Performance Obligations

Our contracts may contain more than one of the products and services listed above, each of which is separately accounted for as a distinct performance obligation.

Allocation of consideration. We allocate total contract consideration to each distinct performance obligation in a bundled arrangement on a relative standalone selling price basis. The standalone selling price reflects the price we would charge for a specific product or service if it were sold separately in similar circumstances and to similar customers.

Standalone selling price. When available, we use directly observable transactions to determine the standalone selling prices for performance obligations. Our estimates of standalone selling price for each performance obligation require judgment that considers multiple factors, including, but not limited to, historical discounting trends for products and services and pricing practices through different sales channels, gross margin objectives, internal costs, competitor pricing strategies, technology lifecycles and market conditions.

We separately determine the standalone selling prices by product or service type. Additionally, we segment the standalone selling prices for products where the pricing strategies differ, and where there are differences in customers and circumstances that warrant segmentation.

We also estimate the standalone selling price of our material rights. Lastly, we estimate the value of the customer's option to purchase or receive additional products or services at a discounted price by estimating the incremental discount the customer would obtain when exercising the option and the likelihood that the option would be exercised.

Other Policies and Judgments

Contract modifications. We may modify contracts to offer customers additional products or services. Each of the additional products and services is generally considered distinct from those products or services transferred to the customer before the modification. We evaluate whether the contract price for the additional products and services reflects the standalone selling price as adjusted for facts and circumstances applicable to that contract. In these cases, we account for the additional products or services as a separate contract. In other cases where the pricing in the modification does not reflect the standalone selling price as adjusted for facts and circumstances applicable to that contract, we account for the additional products or services as part of the existing contract on a prospective basis, on a cumulative catch-up basis, or a combination of both based on the nature of the modification. In instances where the pricing in the modification offers the customer a credit for a prior arrangement, we adjust our variable consideration reserves for returns and other concessions.

Right of return. Certain contracts contain a right of return that allows the customer to cancel all or a portion of the product or service and receive a credit. We estimate returns based on historical returns data which is constrained to an amount for which a material revenue reversal is not probable. We do not recognize revenue for products or services that are expected to be returned.

Practical expedient elected. We do not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed. For contracts that were modified before the beginning of the earliest reporting period presented, we have not retrospectively restated the contract for those modifications. We have disclosed the aggregate effect of all modifications when identifying the satisfied and unsatisfied performance obligations for purposes of determining the transaction price and allocating the transaction price at transition.

Research and development. Research and development expense consists primarily of personnel costs for our engineers and third parties engaged in the design and development of our products, software and technologies, including salary, bonus and stock-based compensation expense, project material costs, services and depreciation. Such costs are charged to research and development expense as they are incurred.

Stock-based compensation expense. We recognize compensation expense for time-based restricted stock units ("RSUs") using the straight-line amortization method based on the fair value of RSUs on the date of grant. The fair value of RSUs is the closing market price of Broadcom common stock on the date of grant, reduced by the present value of dividends expected to be paid on Broadcom common stock prior to vesting. We recognize compensation expense for time-based stock options and employee stock purchase plan rights under the Broadcom Inc. Employee Stock Purchase Plan, as amended ("ESPP") based on the estimated grant-date fair value determined using the Black-Scholes valuation model with a straight-line amortization method.

Certain equity awards include both service and market conditions. The fair value of market-based awards is estimated on the date of grant using the Monte Carlo simulation technique. Compensation expense for market-based awards is amortized based upon a graded vesting method over the service period.

We estimate forfeitures expected to occur and recognize stock-based compensation expense for such awards expected to vest. Changes in the estimated forfeiture rates can have a significant effect on stock-based compensation expense since the effect of adjusting the rate is recognized in the period the forfeiture estimate is changed.

Shipping and handling costs. Our shipping and handling costs charged to customers are included in net revenue and the associated expense is included in cost of revenue for all periods presented.

Litigation and settlement cost. We are involved in legal actions and other matters arising in our recent business acquisitions and in the normal course of business. We recognize an estimated loss contingency when the outcome is probable prior to issuance of the consolidated financial statements and we are able to reasonably estimate the amount or range of any possible loss.

Income taxes. We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We recognize net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. If we determine that we are able to realize our deferred income tax assets in the future in excess of their net carrying values, we adjust the valuation allowance and reduce the provision for income taxes or increase the benefit from income taxes. Likewise, if we determine that we are not able to realize all or part of our net deferred tax assets, we increase the provision for income taxes or decrease the benefit from income taxes in the period such determination is made.

We account for uncertainty in income taxes in accordance with the applicable accounting guidance on income taxes. This guidance provides that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits.

Net income per share. Basic net income per share is computed by dividing net income attributable to common stock by the weighted-average number of shares of common stock outstanding during the period. Diluted net income per share is computed by dividing net income attributable to common stock by the weighted-average number of shares of common stock and potentially dilutive shares of common stock outstanding during the period. Diluted shares outstanding include the dilutive effect of unvested RSUs, in-the-money stock options, and ESPP rights (together referred to as “equity awards”), as well as convertible preferred stock. Potentially dilutive shares whose effect would have been antidilutive are excluded from the computation of diluted net income per share.

The dilutive effect of equity awards is calculated based on the average stock price for each fiscal period, using the treasury stock method. Under the treasury stock method, the amount the employee must pay for exercising stock options and purchasing shares under the ESPP and the amount of compensation cost for future service that we have not yet recognized are collectively assumed to be used to repurchase shares. The dilutive effect of convertible preferred stock is calculated using the if-converted method. The if-converted method assumes that these securities were converted at the beginning of the reporting period to the extent that the effect is dilutive.

Recent Accounting Guidance Not Yet Adopted

In October 2021, the Financial Accounting Standards Boards issued Accounting Standards Update (“ASU”) 2021-08, *Business Combinations (Topic 805): Accounting for*

Contract Assets and Contract Liabilities from Contracts with Customers. The new guidance requires contract assets and contract liabilities acquired in a business combination to be recognized and measured by the acquirer on the acquisition date in accordance with Accounting Standards Codification 606, *Revenue from Contracts with Customers*, as if it had originated the contracts. This approach differs from the current requirement to measure contract assets and contract liabilities acquired in a business combination at fair value. The new guidance will be effective for the first quarter of our fiscal year ending October 29, 2023, with early adoption permitted. The adoption impact of the new standard will depend on the magnitude of future acquisitions. The standard will not impact acquired contract assets or liabilities from business combinations occurring prior to the adoption date.

3. Revenue from Contracts with Customers

Disaggregation

We have considered (1) information that is regularly reviewed by our Chief Executive Officer, who has been identified as the chief operating decision maker (the "CODM") as defined by the authoritative guidance on segment reporting, in evaluating financial performance and (2) disclosures presented outside of our financial statements in our earnings releases and used in investor presentations to disaggregate revenues. The principal category we use to disaggregate revenues is the nature of our products and subscriptions and services, as presented in our consolidated statements of operations. In addition, revenues by reportable segment are presented in Note 13. "Segment Information".

The following tables present revenue disaggregated by type of revenue and by region for the periods presented:

	Fiscal Year 2021			
	Americas	Asia Pacific	Europe, the Middle East and Africa	Total
	(In millions)			
Products	$ 1,809	$ 17,258	$ 1,819	$ 20,886
Subscriptions and services[a]	4,290	720	1,554	6,564
Total	$ 6,099	$ 17,978	$ 3,373	$ 27,450

	Fiscal Year 2020			
	Americas	Asia Pacific	Europe, the Middle East and Africa	Total
	(In millions)			
Products	$ 1,775	$ 14,442	$ 1,218	$ 17,435
Subscriptions and services[a]	4,059	881	1,513	6,453
Total	$ 5,834	$ 15,323	$ 2,731	$ 23,888

	Fiscal Year 2019			
	Americas	Asia Pacific	Europe, the Middle East and Africa	Total
	(In millions)			
Products	$ 2,023	$ 14,857	$ 1,237	$ 18,117
Subscriptions and services[a]	3,126	374	980	4,480
Total	$ 5,149	$ 15,231	$ 2,217	$ 22,597

(a) Subscriptions and services predominantly includes software licenses with termination for convenience clauses.

Although we recognize revenue for the majority of our products when title and control transfer in Penang, Malaysia, we disclose net revenue by region based primarily on the geographic shipment location or delivery location specified by our distributors, original equipment manufacturer ("OEM") customers, contract manufacturers, channel partners, or software customers.

Contract Balances

Contract assets and contract liabilities balances were as follows:

	Contract Assets	Contract Liabilities
	(In millions)	
Balance as of November 1, 2020	$ 158	$ 3,443
Balance as of October 31, 2021	$ 126	$ 3,185

Changes in our contract assets and contract liabilities primarily result from the timing difference between our performance and the customer's payment. We fulfill our obligations under a contract with a customer by transferring products and services in exchange for consideration from the customer. We recognize a contract asset when we transfer products or services to a customer and the right to consideration is conditional on something other than the passage of time. Accounts receivable are recorded when the customer has been billed or the right to consideration is unconditional. We recognize contract liabilities when we have received consideration or an amount of consideration is due from the customer and we have a future obligation to transfer products or services. Contract liabilities include amounts billed or collected and advanced payments on contracts or arrangements which may include termination for convenience provisions. The amount of revenue recognized during fiscal year 2021 that was included in the contract liabilities balance as of November 1, 2020 was $2,617 million. The amount of revenue recognized during fiscal year 2020 that was included in the contract liabilities balance as of November 3, 2019 was $1,450 million.

Remaining Performance Obligations

Revenue allocated to remaining performance obligations represents the transaction price allocated to unsatisfied or partially unsatisfied performance obligations. Remaining performance obligations include unearned revenue and amounts that will be invoiced and recognized as revenue in future periods, but do not include contracts for software, subscriptions or services where the customer is not committed. The customer is not considered committed when termination for convenience without payment of a substantive penalty exists, either contractually or through customary business practice. The majority of our customer software contracts include termination for convenience clauses without a substantive penalty and are not considered committed. Additionally, as a practical expedient, we have not included contracts that have an original duration of one year or less, nor have we included contracts with sales-based or usage-based royalties promised in exchange for a license of IP.

Certain multi-year customer contracts in our semiconductor solutions segment contain firmly committed amounts and the remaining performance obligations under these contracts as of October 31, 2021 were approximately $13.6 billion. We expect approximately 31% of this amount to be recognized as revenue over the next 12 months. Although the majority of our software contracts are not deemed to be committed, our customers generally do not exercise their termination for convenience rights. In addition, the majority of our contracts for products, subscriptions and services have a duration of one year or less. Accordingly, our remaining performance obligations disclosed above are not indicative of revenue for future periods.

Table of Contents

4. Acquisitions

Acquisition of the Symantec Corporation Enterprise Security Business

On November 4, 2019 (the "Symantec Acquisition Date"), we completed the purchase of the Symantec Business, which was an established leader in cyber security, for $10.7 billion in cash. We acquired the Symantec Business to expand our footprint of mission critical infrastructure software with our existing customer base. The Symantec Business includes a deep and broad mix of products, services and solutions, unifying cloud and on-premises security to provide advanced threat protection and information protection across endpoints, network, email and cloud applications. We financed this acquisition with the net proceeds from borrowings under the November 2019 Term Loans, as defined in Note 10. "Borrowings".

The following table presents our allocation of the total purchase price:

	Fair Value
	(In millions)
Current assets	$ 273
Goodwill	6,638
Intangible assets	5,411
Other long-term assets	92
Total assets acquired	12,414
Current liabilities	(1,127)
Other long-term liabilities	(587)
Total liabilities assumed	(1,714)
Fair value of net assets acquired	$ 10,700

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the Symantec Business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved resulting from the acquisition of the Symantec Business. Substantially all goodwill is deductible for tax purposes.

Current assets and current liabilities included amounts held-for-sale related to the acquired Symantec Cyber Security Services ("CSS") business. The CSS business was not aligned with our acquisition-date strategic objectives and was sold on April 30, 2020. We do not have any material continuing involvement with this business and have presented its results in discontinued operations.

Our results of continuing operations for fiscal year 2020 included $1,610 million of net revenue attributable to the Symantec Business. It was impracticable to determine the effect on net income attributable to the Symantec Business as we had integrated the Symantec Business into our ongoing operations during the year. The results of operations of the Symantec Business were included in our infrastructure software segment. Transaction costs related to the acquisition of the Symantec Business of $110 million were included in selling, general and administrative expense for fiscal year 2020.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 2,900	5
Customer contracts and related relationships	2,410	5
Trade name	90	6
Order backlog	11	3
Total identified finite-lived intangible assets	$ 5,411	

Developed technology relates to products used for cyber security solutions, including data loss prevention, endpoint protection, and web, email and cloud security solutions. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of the Symantec Business. Customer contracts and related relationships were valued using the with-and-without-method under the income approach. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. The economic useful life was determined by evaluating many factors, including the useful life of other intangible assets, the length of time remaining on the acquired contracts and the historical customer turnover rates.

Trade name relates to the “Symantec” trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

Order backlog represents business under existing contractual obligations. The fair value of backlog was determined using the multi-period excess earnings method under the income approach based on expected operating cash flows from future contractual revenue. The economic useful life was determined based on the expected life of the backlog and the cash flows over the forecast period.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the Symantec Acquisition Date.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for the periods presented, as if we had completed the acquisition of the Symantec Business as of the beginning of fiscal year 2019. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to interest expense for the additional indebtedness incurred to complete the acquisition, restructuring charges related to the acquisition and transaction costs. For the fiscal year 2019, non-recurring pro forma adjustments directly attributable to the acquisition of the Symantec Business included transaction costs of $136 million. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2019 or of the results of our future operations of the combined business.

	Fiscal Year	
	2020	**2019**
	(In millions)	
Pro forma net revenue	$ 23,264	$ 24,227
Pro forma net income attributable to common stock	$ 2,368	$ 1,265

Other Acquisitions

During fiscal year 2020, we also completed three other acquisitions qualifying as business combinations for total consideration of $201 million, of which $109 million was allocated to goodwill and $46 million was allocated to intangible assets.

Acquisition of CA, Inc.

On November 5, 2018 (the “CA Acquisition Date”), we completed our acquisition of CA (the “CA Merger”), which was a leading provider of information technology (“IT”) management software and solutions. We acquired CA to enhance our infrastructure software capabilities. We financed the CA Merger with the net proceeds from $18 billion of term loans, as well as with cash on hand of the combined companies.

Purpose Consideration

		(In millions)
Cash paid for outstanding CA common stock	$	18,402
Cash paid by Broadcom to retire CA's term loan		274
Cash paid for vested CA equity awards		101
Fair value of partially vested assumed equity awards		67
Total purchase consideration		18,844
Less: cash acquired		(2,750)
Total purchase consideration, net of cash acquired	$	16,094

All vested in-the-money CA stock options, after giving effect to any acceleration, and all outstanding deferred stock units were cashed out upon the completion of the CA Merger. We assumed all unvested CA equity awards held by continuing employees. The portion of the fair value of partially vested equity awards associated with prior service of CA employees represents a component of the total consideration as presented above and was valued based on our share price as of the CA Acquisition Date.

The following table presents our allocation of the total purchase price, net of cash acquired:

		Fair Value
		(In millions)
Current assets	$	1,665
Goodwill		9,796
Intangible assets		12,045
Other long-term assets		240
Total assets acquired		23,746
Current liabilities		(1,966)
Long-term debt		(2,255)
Other long-term liabilities		(3,431)
Total liabilities assumed		(7,652)
Fair value of net assets acquired	$	16,094

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the CA business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved as a result of the CA Merger. Goodwill is not deductible for tax purposes.

Current assets included assets held-for-sale related to CA's Veracode business, which was not aligned with our strategic objectives. On December 31, 2018, we sold this business to Thoma Bravo, LLC for cash consideration of $950 million, before working capital adjustments. We do not have any material continuing involvement with this business and have presented its results in discontinued operations. Current assets also included $80 million of real properties held-for-sale. During fiscal year 2019, we sold a portion of these real properties for $62 million and recognized a loss of $8 million.

Our results of continuing operations for fiscal year 2019 included $3,377 million of net revenue attributable to CA. It was impracticable to determine the effect on net income attributable to CA as we had integrated a substantial portion of CA into our ongoing operations during the year. The results of operations of CA were included in our infrastructure software segment. Transaction costs related to the CA Merger of $73 million were included in selling, general and administrative expense for fiscal year 2019.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 4,957	6
Customer contracts and related relationships	4,190	6
Order backlog	2,569	3
Trade name and other	137	5
Total identified finite-lived intangible assets	11,853	
IPR&D	192	N/A
Total identified intangible assets	$ 12,045	

Developed technology relates to products used for mission critical business tools for processes and applications, as well as products used for cloud-based planning, development, management and security tools. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of CA. Customer contracts and related relationships were valued using the with-and-without-method under the income approach. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. The economic useful life was determined by evaluating many factors, including the useful life of other intangible assets, the length of time remaining on the acquired contracts and the historical customer turnover rates.

Order backlog represents business under existing contractual obligations. The fair value of backlog was determined using the multi-period excess earnings method under the income approach based on expected operating cash flows from future contractual revenue. The economic useful life was determined based on the expected life of the backlog and the cash flows over the forecast period.

Trade name relates to the “CA” trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

The fair value of IPR&D was determined using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the IPR&D, less charges representing the contribution of other assets to those cash flows.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the CA Acquisition Date.

The following table summarizes the details of IPR&D by category as of the CA Acquisition Date:

Description	IPR&D	Percentage of Completion	Estimated Cost to Complete	Expected Completion Date (By Fiscal Year)
	(Dollars in millions)			
Mainframe	$ 178	67 %	$ 138	2019
Enterprise Solutions	$ 14	63 %	$ 12	2019

Discount rates of 12% and 14% were applied to the projected cash flows to reflect the risk related to these mainframe and enterprise solutions IPR&D projects, respectively.

During fiscal year 2020, these IPR&D projects were completed and placed in service.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for fiscal year 2019, as if CA had been acquired as of the beginning of our fiscal year ended November 4, 2018 ("fiscal year 2018"). The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to stock-based compensation expense, interest expense for the additional indebtedness incurred to complete the acquisition, restructuring charges related to the acquisition and transaction costs. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2018 or of the results of our future operations of the combined business.

	Fiscal Year 2019
	(In millions)
Pro forma net revenue	$ 21,697
Pro forma net income attributable to common stock	$ 2,535

5. Supplemental Financial Information

Cash Equivalents

Cash equivalents included $4,668 million and $2,471 million of time deposits and $1,607 million and $790 million of money-market funds as of October 31, 2021 and November 1, 2020, respectively. For time deposits, carrying value approximates fair value due to the short-term nature of the instruments. The fair value of money-market funds, which was consistent with their carrying value, was determined using unadjusted prices in active, accessible markets for identical assets, and as such, they were classified as Level 1 assets in the fair value hierarchy.

Accounts Receivable Factoring

We sell certain of our trade accounts receivable on a non-recourse basis to third-party financial institutions pursuant to factoring arrangements. We account for these transactions as sales of receivables and present cash proceeds as cash provided by operating activities in the consolidated statements of cash flows. Total trade accounts receivable sold under the factoring arrangements were $4,027 million, $3,723 million and $1,151 million during fiscal years 2021, 2020 and 2019, respectively. Factoring fees for the sales of receivables were recorded in other income, net and were not material for any of the periods presented.

Inventory

	October 31, 2021	November 1, 2020
	(In millions)	
Finished goods	$ 423	$ 323
Work-in-process	680	558
Raw materials	194	122
Total inventory	$ 1,297	$ 1,003

Property, Plant and Equipment, Net

	October 31, 2021	November 1, 2020
	(In millions)	
Land	$ 195	$ 194
Construction in progress	38	113
Buildings and leasehold improvements	1,150	1,133
Machinery and equipment	4,161	3,891
Total property, plant and equipment	5,544	5,331
Accumulated depreciation and amortization	(3,196)	(2,822)
Total property, plant and equipment, net	$ 2,348	$ 2,509

Table of Contents

Depreciation expense was $539 million, $570 million and $569 million for fiscal years 2021, 2020, and 2019, respectively.

Other Current Assets

	October 31, 2021	November 1, 2020
	(In millions)	
Prepaid expenses	$ 539	$ 387
Other (miscellaneous)	516	590
Total other current assets	$ 1,055	$ 977

Other Current Liabilities

	October 31, 2021	November 1, 2020
	(In millions)	
Contract liabilities	$ 2,619	$ 2,620
Tax liabilities	541	440
Other (miscellaneous)	679	771
Total other current liabilities	$ 3,839	$ 3,831

Other Long-Term Liabilities

	October 31, 2021	November 1, 2020
	(In millions)	
Unrecognized tax benefits, interest and penalties	$ 3,407	$ 3,185
Contract liabilities	566	823
Other (miscellaneous)	887	1,418
Total other long-term liabilities	$ 4,860	$ 5,426

Other Income, Net

	Fiscal Year		
	2021	2020	2019
		(In millions)	
Gains on investments	$ 99	$ 31	$ 145
Other income	26	56	18
Interest income	16	53	98
Other expense	(10)	(50)	(35)
Gain from lapse of indemnification	—	116	—
Other income, net	$ 131	$ 206	$ 226

Other income includes dividends, gains on sales of businesses and other miscellaneous items.

6. Leases

At the beginning of fiscal year 2020, we adopted ASU 2016-02, *Leases* (“Topic 842”) using the optional adoption method, whereby no adjustment to the financial statements of comparative periods was required. We have operating and finance leases for our facilities, data centers and certain equipment. Operating lease expense was $102 million, $106 million and $244 million for fiscal years 2021, 2020 and 2019, respectively. Finance lease expense was $16 million and $14 million for fiscal years 2021 and 2020, respectively.

Other information related to leases was as follows:

	Fiscal Year	
	2021	2020
	(In millions)	
Cash paid for operating leases included in operating cash flows	$ 140	$ 125
ROU assets obtained in exchange for operating lease liabilities	$ 92	$ 682
ROU assets obtained in exchange for finance lease liabilities	$ 15	$ 74

	October 31, 2021	November 1, 2020
Weighted-average remaining lease term – operating leases (In years)	10	10
Weighted-average remaining lease term – finance leases (In years)	3	4
Weighted-average discount rate – operating leases	3.78 %	3.80 %
Weighted-average discount rate – finance leases	3.11 %	3.33 %

Supplemental balance sheet information related to leases was as follows:

	Classification on the Consolidated Balance Sheets	October 31, 2021	November 1, 2020
		(In millions)	
ROU assets - operating leases	Other long-term assets	$ 588	$ 589
ROU assets - finance leases	Property, plant and equipment, net	$ 55	$ 62
Short-term lease liabilities - operating leases	Other current liabilities	$ 83	$ 100
Long-term lease liabilities - operating leases	Other long-term liabilities	$ 460	$ 527
Short-term lease liabilities - finance leases	Current portion of long-term debt	$ 26	$ 20
Long-term lease liabilities - finance leases	Long-term debt	$ 39	$ 48

Future minimum lease payments under non-cancelable leases as of October 31, 2021 were as follows:

	October 31, 2021	
	Operating Leases	Finance Leases
	(In millions)	
2022	$ 101	$ 28
2023	86	18
2024	67	18
2025	57	2
2026	46	2
Thereafter	311	—
Total undiscounted liabilities	668	68
Less: interest	(125)	(3)
Present value of lease liabilities	$ 543	$ 65

7. Goodwill and Intangible Assets

Goodwill

	Semiconductor Solutions	Infrastructure Software	IP Licensing	Total
		(In millions)		
Balance as of November 3, 2019	$ 25,929	$ 10,776	$ 9	$ 36,714
Reallocation due to change in segments	9	—	(9)	—
Acquisitions	35	6,712	—	6,747
Sale of business	(14)	—	—	(14)
Balance as of November 1, 2020	25,959	17,488	—	43,447
Acquisition	—	10	—	10
Sale of business	—	(7)	—	(7)
Balance as of October 31, 2021	$ 25,959	$ 17,491	$ —	$ 43,450

In fiscal year 2020, we reassigned goodwill balances among our reportable segments to reflect changes in our segment structure.

During the fourth quarter of fiscal years 2021, 2020 and 2019, we completed our annual impairment assessments and concluded that goodwill was not impaired in any of these years.

Intangible Assets

	Gross Carrying Amount	Accumulated Amortization	Net Book Value
		(In millions)	
As of October 31, 2021:			
Purchased technology	$ 23,932	$ (17,148)	$ 6,784
Customer contracts and related relationships	8,356	(4,533)	3,823
Order backlog	2,579	(2,352)	227
Trade names	787	(386)	401
Other	239	(127)	112
Intangible assets subject to amortization	35,893	(24,546)	11,347
IPR&D	27	—	27
Total	$ 35,920	$ (24,546)	$ 11,374
As of November 1, 2020:			
Purchased technology	$ 24,119	$ (13,925)	$ 10,194
Customer contracts and related relationships	8,389	(3,179)	5,210
Order backlog	2,579	(1,836)	743
Trade names	797	(322)	475
Other	252	(117)	135
Intangible assets subject to amortization	36,136	(19,379)	16,757
IPR&D	25	—	25
Total	$ 36,161	$ (19,379)	$ 16,782

Based on the amount of intangible assets subject to amortization at October 31, 2021, the expected amortization expense for each of the next five fiscal years and thereafter was as follows:

Fiscal Year:	**Expected Amortization Expense**
	(In millions)
2022	$ 4,365
2023	3,237
2024	2,367
2025	659
2026	323
Thereafter	396
Total	$ 11,347

The weighted-average amortization periods remaining by intangible asset category were as follows:

Amortizable intangible assets:	**October 31, 2021**	**November 1, 2020**
	(In years)	
Purchased technology	4	5
Customer contracts and related relationships	3	4
Order backlog	2	2
Trade names	8	9
Other	9	10

Table of Contents

8. Net Income Per Share

	Fiscal Year		
	2021	2020	2019
	(In millions, except per share data)		
Numerator:			
Income from continuing operations	$ 6,736	$ 2,961	$ 2,736
Dividends on preferred stock	(299)	(297)	(29)
Income from continuing operations attributable to common stock	6,437	2,664	2,707
Loss from discontinued operations, net of income taxes, attributable to common stock	—	(1)	(12)
Net income attributable to common stock	$ 6,437	$ 2,663	$ 2,695
Denominator:			
Weighted-average shares outstanding - basic	410	402	398
Dilutive effect of equity awards	19	19	21
Weighted-average shares outstanding - diluted	429	421	419
Basic income per share attributable to common stock:			
Income per share from continuing operations	$ 15.70	$ 6.62	$ 6.80
Loss per share from discontinued operations	—	—	(0.03)
Net income per share	$ 15.70	$ 6.62	$ 6.77
Diluted income per share attributable to common stock:			
Income per share from continuing operations	$ 15.00	$ 6.33	$ 6.46
Loss per share from discontinued operations	—	—	(0.03)
Net income per share	$ 15.00	$ 6.33	$ 6.43

For fiscal years 2021, 2020 and 2019, diluted net income per share excluded the potentially dilutive effect of 12 million, 12 million and 1 million shares of common stock, respectively, issuable upon the conversion of Mandatory Convertible Preferred Stock, as defined in Note 11. "Stockholders' Equity," as their effect was antidilutive.

9. Retirement Plans and Post-Retirement Benefits

Pension and Post-Retirement Benefit Plans

Defined Benefit Pension Plans. The U.S. defined benefit pension plans primarily consist of a qualified pension plan. Benefits of the qualified pension plan are provided under an adjusted career-average-pay program, a cash-balance program or a dollar-per-month program. Benefit accruals under this plan were frozen in 2009. Participants in the adjusted career-average-pay program no longer earn service accruals. Participants in the cash-balance program no longer earn service accruals, but continue to earn 4% interest per year on their cash-balance accounts. There are no active participants under the dollar-per-month program. We also have a non-qualified supplemental pension plan in the United States that principally provides benefits based on compensation in excess of amounts that can be considered under the qualified pension plan.

We also have defined benefit pension plans for certain employees in Austria, France, Germany, India, Israel, Italy, Japan and Taiwan. Eligibility is generally determined based on the terms of our plans and local statutory requirements.

Post-Retirement Benefit Plans. Certain of our U.S. employees who meet the retirement eligibility requirements as of their termination dates, may receive post-retirement medical benefits under our retiree medical account program. The majority of the eligible employees receive a medical benefit spending account of $55,000 upon retirement to pay premiums for medical coverage through the maximum age of 75 as a retiree.

Our group life insurance plan offers post-retirement life insurance coverage for certain U.S. employees.

Net Periodic Benefit (Income) Cost

	Pension Benefits			Post-Retirement Benefits		
	Fiscal Year			Fiscal Year		
	2021	2020	2019	2021	2020	2019
	(In millions)					
Service cost	$ 11	$ 12	$ 10	$ —	$ —	$ —
Interest cost	39	45	58	3	3	3
Expected return on plan assets	(40)	(46)	(59)	(3)	(3)	(3)
Other	1	(3)	1	1	1	(1)
Net periodic benefit (income) cost	$ 11	$ 8	$ 10	$ 1	$ 1	$ (1)
Net actuarial (gain) loss	$ 8	$ (28)	$ 13	$ 3	$ —	$ 11

The components of net periodic benefit (income) cost other than the service cost are included in other income, net. Service cost is recognized in operating expenses.

Funded Status

	Pension Benefits		Post-Retirement Benefits	
	October 31, 2021	November 1, 2020	October 31, 2021	November 1, 2020
	(In millions)			
Change in plan assets:				
Fair value of plan assets — beginning of period	$ 1,593	$ 1,539	$ 88	$ 85
Actual return on plan assets	20	129	(2)	5
Employer contributions	9	13	1	1
Payments from plan assets	(102)	(96)	(3)	(3)
Foreign currency impact	1	8	—	—
Fair value of plan assets — end of period	1,521	1,593	84	88
Change in benefit obligations:				
Benefit obligations — beginning of period	1,588	1,553	95	93
Service cost	11	12	—	—
Interest cost	39	45	3	3
Actuarial (gain) loss	(11)	61	(2)	2
Benefit payments	(102)	(96)	(3)	(3)
Curtailments	(1)	(6)	—	—
Benefit obligations assumed in an acquisition	—	10	—	—
Foreign currency impact	2	9	—	—
Benefit obligations — end of period	1,526	1,588	93	95
Overfunded (underfunded) status of benefit obligations [a]	$ (5)	$ 5	$ (9)	$ (7)
Actuarial losses and prior service costs recognized in accumulated other comprehensive loss, net of taxes	$ (100)	$ (94)	$ (16)	$ (14)

(a) Substantially all amounts recognized in the consolidated balance sheets were recorded in other long-term assets and other long-term liabilities for all periods presented.

Plans with benefit obligations in excess of plan assets:

	Pension Benefits		Post-Retirement Benefits	
	October 31, 2021	November 1, 2020	October 31, 2021	November 1, 2020
	(In millions)			
Projected benefit obligations	$ 83	$ 82	$ —	$ —
Accumulated benefit obligations	$ 65	$ 68	$ 13	$ 15
Fair value of plan assets	$ 13	$ 11	$ —	$ —

Plans with benefit obligations less than plan assets:

	Pension Benefits		Post-Retirement Benefits	
	October 31, 2021	November 1, 2020	October 31, 2021	November 1, 2020
	(In millions)			
Projected benefit obligations	$ 1,443	$ 1,506	$ —	$ —
Accumulated benefit obligations	$ 1,442	$ 1,505	$ 80	$ 80
Fair value of plan assets	$ 1,508	$ 1,582	$ 84	$ 88

The fair value of pension plan assets as of October 31, 2021 and November 1, 2020 included $174 million and $160 million, respectively, of assets for our non-U.S. pension plans.

The projected benefit obligations as of October 31, 2021 and November 1, 2020 included $217 million and $206 million, respectively, of obligations related to our non-U.S. pension plans. The accumulated benefit obligations as of October 31, 2021 and November 1, 2020 included $199 million and $190 million, respectively, of obligations related to our non-U.S. pension plans.

Expected Future Benefit Payments

Fiscal Years:	Pension Benefits	Post-Retirement Benefits
	(In millions)	
2022	$ 94	$ 8
2023	$ 94	$ 4
2024	$ 94	$ 4
2025	$ 94	$ 4
2026	$ 93	$ 4
2027-2031	$ 447	$ 23

Defined Benefit Pension Plan Investment Policy

Plan assets of the funded defined benefit pension plans are generally invested in funds held by third-party fund managers. Our benefit plan investment committee has set the investment strategy to fully match the liability. We direct the overall portfolio allocation and use a third-party investment consultant that has the discretion to structure portfolios and select the investment managers within those allocation parameters. Multiple investment managers are utilized, including both active and passive management approaches. The plan assets are invested using the liability-driven investment strategy intended to minimize market and interest rate risks, and those assets are periodically rebalanced toward asset allocation targets.

Substantially all of the plan assets are for the U.S. qualified pension plan. The target asset allocation for this plan reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plan. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. For both fiscal years 2021 and 2020, 100% of the U.S. qualified pension plan assets were allocated to fixed income, in line with the target allocation. The fixed income allocation is primarily directed toward long-term core bond investments, with smaller allocations to Treasury Inflation-Protected Securities and high-yield bonds.

Table of Contents

Fair Value Measurement of Defined Benefit Pension Plan Assets

	October 31, 2021		
	Fair Value Measurements at Reporting Date Using		
	Level 1	Level 2	Total
	(In millions)		
Cash equivalents	$ 24 [(a)]	$ —	$ 24
Equity securities:			
Non-U.S. equity securities	28 [(b)]	—	28
Fixed-income securities:			
U.S. treasuries	—	186 [(c)]	186
Corporate bonds	—	1,222 [(c)]	1,222
Municipal bonds	—	24 [(c)]	24
Government bonds	—	34 [(c)]	34
Asset-backed securities	—	3 [(c)]	3
Total plan assets	$ 52	$ 1,469	$ 1,521

	November 1, 2020		
	Fair Value Measurements at Reporting Date Using		
	Level 1	Level 2	Total
	(In millions)		
Cash equivalents	$ 42 [(a)]	$ —	$ 42
Equity securities:			
Non-U.S. equity securities	26 [(b)]	—	26
Fixed-income securities:			
U.S. treasuries	—	158 [(c)]	158
Corporate bonds	—	1,307 [(c)]	1,307
Municipal bonds	—	22 [(c)]	22
Government bonds	—	36 [(c)]	36
Asset-backed securities	—	2 [(c)]	2
Total plan assets	$ 68	$ 1,525	$ 1,593

(a) Cash equivalents primarily included short-term investment funds which consisted of short-term money market instruments that were valued based on quoted prices in active markets.

(b) These equity securities were valued based on quoted prices in active markets.

(c) These amounts consisted of investments that were traded less frequently than Level 1 securities and were valued using inputs that included quoted prices for similar assets in active markets and inputs other than quoted prices that were observable for the assets, such as interest rates, yield curves, prepayment speeds, collateral performance, broker/dealer quotes and indices that were observable at commonly quoted intervals.

Post-Retirement Benefit Plan Investment Policy

Our overall investment strategy for the group life insurance plan is to allocate assets in a manner that seeks to both maximize the safety of promised benefits and minimize the cost of funding those benefits. The target asset allocation for plan assets reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plan. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. We set the overall portfolio allocation and use an investment manager that directs the investment of funds consistent with that allocation. The investment manager invests the plan assets in index funds that it manages. For both fiscal years 2021 and 2020, 100% of plan assets were allocated to commingled funds that invested in fixed income, in line with the target allocation. The fair value of the commingled funds are measured using net asset value per share as a practical expedient.

Assumptions

The assumptions used to determine the benefit obligations and net periodic benefit (income) cost from our defined benefit pension plans and post-retirement benefit plans are presented in the tables below. The expected long-term return on assets shown in the tables below represents an estimate of long-term returns on investment portfolios primarily consisting of combinations of debt, equity and other investments, depending on the plan. The long-term rates of return are then weighted based on the asset classes (both historical and forecasted) in which we expect the pension and post-retirement funds to be invested. Discount rates reflect the current rate at which defined benefit pension and post-retirement benefit obligations could be settled based on the measurement dates of the plans, which is October 31, the month end closest to our fiscal year end. The range of assumptions that are used for defined benefit pension plans reflects the different economic environments within various countries.

	Assumptions for Benefit Obligations as of		**Assumptions for Net Periodic Benefit (Income) Cost Fiscal Year**		
	October 31, 2021	**November 1, 2020**	**2021**	**2020**	**2019**
Defined benefit pension plans:					
Discount rate	0.75%-6.50%	0.61%-6.54%	0.61%-6.54%	0.47%-7.00%	0.50%-8.00%
Average increase in compensation levels	2.00%-10.00%	2.00%-10.00%	2.00%-10.00%	2.00%-10.00%	1.80%-10.00%
Expected long-term return on assets	N/A	N/A	1.00%-8.00%	1.50%-7.80%	1.50%-7.75%

	Assumptions for Benefit Obligations as of		**Assumptions for Net Periodic Benefit (Income) Cost Fiscal Year**		
	October 31, 2021	**November 1, 2020**	**2021**	**2020**	**2019**
Post-retirement benefit plans:					
Discount rate	2.30%-2.90%	2.10%-2.90%	2.10%-2.90%	2.80%-3.20%	4.12%-4.60%
Average increase in compensation levels	3.00%	3.00%	3.00%	3.00%	3.00%
Expected long-term return on assets	N/A	N/A	2.90%	3.20%	4.80%

	Assumed Health Care Cost Trend Rate Used to Measure the Expected Cost of Benefits as of	
	October 31, 2021	November 1, 2020
Health care cost trend rate assumed for next year	6.75%	7.25%
Rate to which the health care cost trend rate is assumed to decline (ultimate health care cost trend rate)	4.50%	4.50%
Year that the rate reaches the ultimate health care cost trend rate	2029	2029

Defined Contribution Plans

Our eligible U.S. employees participate in a company-sponsored 401(k) plan. Under the plan, we match employees contributions dollar for dollar up to 6% of their eligible earnings. All matching contributions vest immediately. During fiscal years 2021, 2020 and 2019, we made contributions of $94 million, $99 million and $89 million, respectively, to the 401(k) plan.

In addition, other eligible employees outside of the U.S. receive retirement benefits under various defined contribution retirement plans.

Table of Contents

10. Borrowings

	Effective Interest Rate	October 31, 2021	November 1, 2020
	(In millions, except percentages)		
September 2021 Senior Notes - fixed rate			
3.137% notes due November 2035	4.23 %	$ 3,250	$ —
3.187% notes due November 2036	4.79 %	2,750	—
		6,000	—
March 2021 Senior Notes - fixed rate			
3.419% notes due April 2033	4.66 %	2,250	—
3.469% notes due April 2034	4.63 %	3,250	—
		5,500	—
January 2021 Senior Notes - fixed rate			
1.950% notes due February 2028	2.10 %	750	—
2.450% notes due February 2031	2.56 %	2,750	—
2.600% notes due February 2033	2.70 %	1,750	—
3.500% notes due February 2041	3.60 %	3,000	—
3.750% notes due February 2051	3.84 %	1,750	—
		10,000	—
June 2020 Senior Notes - fixed rate			
3.459% notes due September 2026	4.19 %	752	1,695
4.110% notes due September 2028	5.02 %	1,965	2,222
		2,717	3,917
May 2020 Senior Notes - fixed rate			
2.250% notes due November 2023	2.40 %	105	1,000
3.150% notes due November 2025	3.29 %	900	2,250
4.150% notes due November 2030	4.27 %	2,679	2,750
4.300% notes due November 2032	4.39 %	2,000	2,000
		5,684	8,000
April 2020 Senior Notes - fixed rate			
4.700% notes due April 2025	4.88 %	1,020	2,250
5.000% notes due April 2030	5.18 %	1,086	2,250
		2,106	4,500
November 2019 Term Loans - floating rate			
LIBOR plus 1.125% term loan due November 2022	1.54 %	—	1,819
LIBOR plus 1.250% term loan due November 2024	1.56 %	—	4,069
		—	5,888
April 2019 Senior Notes - fixed rate			
3.125% notes due April 2021	3.61 %	—	525
3.125% notes due October 2022	3.53 %	—	693
3.625% notes due October 2024	3.98 %	622	1,044
4.250% notes due April 2026	4.54 %	944	2,500
4.750% notes due April 2029	4.95 %	1,958	3,000
		3,524	7,762
2017 Senior Notes - fixed rate			
2.200% notes due January 2021	2.41 %	—	282
3.000% notes due January 2022	3.21 %	255	842

	Effective Interest Rate	October 31, 2021	November 1, 2020
	(In millions, except percentages)		
2.650% notes due January 2023	2.78 %	260	1,000
3.625% notes due January 2024	3.74 %	829	1,352
3.125% notes due January 2025	3.23 %	495	1,000
3.875% notes due January 2027	4.02 %	2,922	4,800
3.500% notes due January 2028	3.60 %	777	1,250
		5,538	10,526
Assumed CA Senior Notes - fixed rate			
3.600% notes due August 2022	4.07 %	—	283
4.500% notes due August 2023	4.10 %	143	250
4.700% notes due March 2027	5.15 %	265	350
		408	883
Other borrowings			
2.500% - 4.500% senior notes due August 2022 - August 2034	2.59% - 4.55%	22	22
Total principal amount outstanding		41,499	41,498
Less: Unamortized discount and issuance costs		(1,834)	(504)
Total debt		$ 39,665	$ 40,994

As of October 31, 2021 and November 1, 2020, short-term finance lease liabilities of $26 million and $20 million, respectively, were included in the current portion of long-term debt and long-term finance lease liabilities of $39 million and $48 million, respectively, were included in long-term debt.

September 2021 Senior Notes

In September 2021, we completed our private offers to exchange $6.0 billion of certain of our outstanding notes maturing between 2025 and 2030 (the “September 2021 Exchange Offer”) for $3,250 million of 3.137% new senior unsecured notes due November 2035 and $2,750 million of 3.187% new senior unsecured notes due November 2036 (collectively, the “September 2021 Senior Notes”). As a result of the September 2021 Exchange Offer, we paid premiums of $762 million, which were included in unamortized discount and issuance costs. We may redeem or purchase, in whole or in part, any of the September 2021 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the September 2021 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes, plus accrued and unpaid interest. As of October 31, 2021, the September 2021 Senior Notes were recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

March 2021 Senior Notes

In March 2021, we completed our private offers to exchange $5.5 billion of certain of our outstanding notes maturing between 2024 and 2027 (the “March 2021 Exchange Offer”) for $2,250 million of 3.419% new senior unsecured notes due April 2033 and $3,250 million of 3.469% new senior unsecured notes due April 2034 (collectively, the “March 2021 Senior Notes”). As a result of the March 2021 Exchange Offer, we paid premiums of $581 million, which were included in unamortized discount and issuance costs. We may redeem or purchase, in whole or in part, any of the March 2021 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the March 2021 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes, plus accrued and unpaid interest. As of October 31, 2021, the March 2021 Senior Notes were recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

In connection with the March 2021 Exchange Offer, Broadcom Corporation ("BRCM") and Broadcom Technologies Inc. ("BTI") were automatically and unconditionally released from their guarantees in accordance with the respective indentures governing the January 2021 Senior Notes, June 2020 Senior Notes, May 2020 Senior Notes, April 2020 Senior Notes, and April 2019 Senior Notes, as defined below respectively.

January 2021 Senior Notes

In January 2021, we issued $10 billion of senior unsecured notes (the "January 2021 Senior Notes"). We may redeem or purchase, in whole or in part, any of the January 2021 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the January 2021 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes, plus accrued and unpaid interest. As of October 31, 2021, the January 2021 Senior Notes were recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

Using the net proceeds from the January 2021 Senior Notes, we repaid the outstanding balance of $5,888 million of our unsecured term A-3 facility and unsecured term A-5 facility under the credit agreement entered into on November 4, 2019 (the "November 2019 Credit Agreement"), repurchased $3,830 million of certain of our outstanding notes maturing between 2021 and 2023 through a cash tender offer and redemption, and repaid $282 million of our 2.200% notes upon maturity in January 2021. As a result of these repayments and repurchases, we incurred premiums of $151 million and wrote off $47 million of unamortized discount and issuance costs, both of which were included in interest expense.

January 2021 Credit Agreement

In January 2021, we entered into a credit agreement (the "January 2021 Credit Agreement"), which provides for a five-year $7.5 billion unsecured revolving credit facility (the "Revolving Facility"), of which $500 million is available for the issuance of multi-currency letters of credit. The issuance of letters of credit and certain other instruments would reduce the aggregate amount otherwise available under the Revolving Facility for revolving loans. Subject to the terms of the January 2021 Credit Agreement, we are permitted to borrow, repay and reborrow revolving loans at any time prior to the earlier of (a) January 19, 2026 and (b) the date of termination in whole of the revolving lenders' commitments under the January 2021 Credit Agreement. In connection with the January 2021 Credit Agreement, we terminated the credit agreement entered into on May 7, 2019 (the "May 2019 Credit Agreement"), which provided for a five-year $5 billion unsecured revolving credit facility, and the November 2019 Credit Agreement. As of October 31, 2021, we had no borrowings outstanding under the Revolving Facility.

June 2020 Senior Notes

In June 2020, we completed our private offers to exchange $3,742 million of certain series of our outstanding notes maturing between 2021 and 2024, for $1,695 million of new senior notes due 2026 and $2,222 million of new senior notes due 2028 (collectively, the "June 2020 Senior Notes"). As a result of this exchange, we paid premiums of $177 million, which were included in unamortized discount and issuance costs. We may redeem or purchase, in whole or in part, any of the June 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the June 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest. The June 2020 Senior Notes are recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

May 2020 Senior Notes

In May 2020, we issued $8 billion of senior unsecured notes (the "May 2020 Senior Notes"). We may redeem or purchase, in whole or in part, any of the May 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the May 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest. The May 2020 Senior Notes are recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

The net proceeds from this issuance, together with the remaining net proceeds from the issuance of the April 2020 Senior Notes, as defined below, were used to repay an aggregate of $5,424 million of term loans outstanding under the November 2019 Credit Agreement, consisting of repayments of $2,712 million of each of our unsecured term A-3 and A-5 facilities and $3 billion of borrowings outstanding under the unsecured revolving credit facility provided by the May 2019 Credit Agreement.

April 2020 Senior Notes

In April 2020, we issued $4.5 billion of senior unsecured notes (the "April 2020 Senior Notes"). We may redeem or purchase, in whole or in part, any of the April 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the April 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest. The April 2020 Senior Notes are recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

Pursuant to a cash tender offer that we completed in April 2020, we repurchased $2,361 million of our 3.000% notes due January 2022, $1,274 million of our 3.125% notes due April 2021 and $351 million of our 2.200% notes due January 2021 with the net proceeds from the April 2020 Senior Notes. As a result of these repurchases, we incurred premiums of $78 million and wrote off $15 million of unamortized discount and issuance costs, both of which were included in interest expense.

November 2019 Term Loans

On November 4, 2019, in connection with the acquisition of the Symantec Business, we entered into the November 2019 Credit Agreement, which provides for a $7,750 million unsecured term A-3 facility and a $7,750 million unsecured term A-5 facility (collectively, the "November 2019 Term Loans"). We used net proceeds from the November 2019 Term Loans to fund the $10.7 billion Symantec Business acquisition and to repay $750 million principal amount of 5.375% notes due December 2019 and $2,750 million principal amount of 2.375% notes due January 2020, on their respective maturity dates. During fiscal year 2020, we repaid an aggregate of $9,612 million of our November 2019 Term Loans, consisting of repayments of $5,931 million and $3,681 million of our unsecured term A-3 and A-5 facilities, respectively, and wrote off $60 million of unamortized discount and issuance costs. During fiscal year 2021, we repaid the remaining outstanding balance of the November 2019 Term Loans using the proceeds from the January 2021 Senior Notes.

April 2019 Senior Notes

In April 2019, we issued $11 billion of senior unsecured notes (the "April 2019 Senior Notes"). We may redeem or purchase, in whole or in part, any of the April 2019 Senior Notes prior to their respective maturities, subject to a make-whole premium determined in accordance with the indenture governing the April 2019 Senior Notes, plus accrued and unpaid interest. The April 2019 Senior Notes are recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

Registered Exchange Offer

In connection with the issuance of the June 2020 Senior Notes, the May 2020 Senior Notes, the April 2020 Senior Notes (collectively, the "2020 Senior Notes") and the April 2019 Senior Notes, we entered into registration rights agreements, pursuant to which we were obligated to use commercially reasonable efforts to file with the Securities and Exchange Commission (the "SEC"), and cause to be declared effective, a registration statement with respect to an offer to exchange (the "Registered Exchange Offer") each series of the 2020 Senior Notes and the April 2019 Senior Notes for notes that are registered with the SEC (the "Registered Notes"), with substantially identical terms. We completed the Registered Exchange Offer on August 10, 2020. Substantially all of our 2020 Senior Notes and April 2019 Senior Notes were tendered and exchanged for the corresponding Registered Notes in the Registered Exchange Offer.

Commercial Paper

In February 2019, we established a commercial paper program pursuant to which we may issue unsecured commercial paper notes ("Commercial Paper") in principal amount of up to $2 billion outstanding at any time with maturities of up to 397 days from the date of issue. Commercial Paper is sold under customary terms in the commercial paper market and may be issued at a discount from par or, alternatively, may be sold at par and bear interest at rates dictated by market conditions at the time of their issuance. The discount associated with the Commercial Paper is amortized to interest expense over its term. Outstanding Commercial Paper reduces the amount that would otherwise be available to borrow for general corporate purposes under the Revolving Facility. As our commercial paper program is supported by the Revolving Facility, we have the ability and intent to continuously refinance Commercial Paper. As of October 31, 2021 and November 1, 2020, we had no Commercial Paper outstanding.

2017 Senior Notes

During the fiscal year ended October 29, 2017, Broadcom Cayman Finance Limited, which subsequently merged into BTI during fiscal year 2019 with BTI remaining as the surviving entity, and BRCM issued $17,550 million of senior unsecured notes (the "2017 Senior Notes"). Our 2017 Senior Notes are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by Broadcom and BTI. We may redeem or purchase, in whole or in part, any of the 2017

Senior Notes prior to their respective maturities, subject to a make-whole premium determined in accordance with the indenture governing the 2017 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest.

During the fiscal year ended November 4, 2018, substantially all of the 2017 Senior Notes were tendered and exchanged for notes registered with the SEC, with substantially identical terms.

Assumed CA Senior Notes

In connection with our acquisition of CA during fiscal year 2019, we assumed $2.25 billion CA's outstanding senior unsecured notes (the "Assumed CA Senior Notes"). CA remains the sole obligor under the Assumed CA Senior Notes. We may redeem all or a portion of the Assumed CA Senior Notes at any time, subject to a specified make-whole premium as set forth with the indenture governing the Assumed CA Senior Notes. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest.

Fair Value of Debt

As of October 31, 2021, the estimated aggregate fair value of our debt was $43,392 million. The fair value of our senior notes was determined using quoted prices from less active markets. All of our debt obligations are categorized as Level 2 instruments.

Future Principal Payments of Debt

The future scheduled principal payments of debt as of October 31, 2021 were as follows:

Fiscal Year:	**Future Scheduled Principal Payments**
	(In millions)
2022	$ 264
2023	403
2024	1,563
2025	1,515
2026	2,596
Thereafter	35,158
Total	$ 41,499

As of October 31, 2021 and November 1, 2020, we accrued interest payable of $282 million and $304 million, respectively, and were in compliance with all debt covenants.

11. Stockholders' Equity

Mandatory Convertible Preferred Stock Offering

On September 30, 2019, we completed an offering of approximately 4 million shares of 8.00% Mandatory Convertible Preferred Stock, Series A, $0.001 par value per share ("Mandatory Convertible Preferred Stock"), which generated net proceeds of approximately $3,679 million.

The holders of Mandatory Convertible Preferred Stock are entitled to receive, when, as and if declared by our Board of Directors, or an authorized committee thereof, out of funds legally available for payment, cumulative dividends at the annual rate of 8.00% of the liquidation preference of $1,000 per share (equivalent to $80 annually per share), payable in cash or, subject to certain limitations, by delivery of shares of our common stock or any combination of cash and shares of our common stock, at our election; provided, however, that any undeclared and unpaid dividends will continue to accumulate.

Subject to limited exceptions, no dividends may be declared or paid on shares of our common stock, unless all accumulated dividends have been paid or set aside for payment on all outstanding shares of our Mandatory Convertible Preferred Stock for all past completed dividend periods. In the event of our voluntary or involuntary liquidation, dissolution or winding-up, no distribution of our assets may be made to holders of our common stock until we have paid to holders of our Mandatory Convertible Preferred Stock a liquidation preference equal to $1,000 per share plus accumulated and unpaid dividends.

On September 30, 2022, unless earlier converted, each outstanding share of Mandatory Convertible Preferred Stock will automatically convert into shares of our common stock at a rate between the then minimum and maximum conversion rates. At any time prior to September 30, 2022, holders may elect to convert each share of Mandatory Convertible Preferred Stock into shares of our common stock at the then minimum conversion rate. The conversion rates are subject to anti-dilution adjustments. As of October 31, 2021, the minimum conversion rate was 3.0822 and the maximum conversion rate was 3.6025.

We recognized $27 million of accrued preferred stock dividends at each of October 31, 2021 and November 1, 2020, which were presented as temporary equity in our consolidated balance sheets.

Cash Dividends Declared and Paid

	Fiscal Year		
	2021	2020	2019
	(In millions, except per share data)		
Dividends per share to common stockholders	$ 14.40	$ 13.00	$ 10.60
Dividends to common stockholders	$ 5,913	$ 5,235	$ 4,235
Dividends per share to preferred stockholders	$ 80.00	$ 80.00	$ —
Dividends to preferred stockholders	$ 299	$ 299	$ —

Stock Repurchase Program

Pursuant to an $18 billion stock repurchase program previously authorized by our Board of Directors, we repurchased and retired approximately 21 million shares of our common stock for $5,435 million during fiscal year 2019. This authorization ended on November 3, 2019.

In December 2021, our Board of Directors authorized a stock repurchase program to repurchase up to $10 billion of our common stock from time to time on or prior to December 31, 2022. Repurchases under our stock repurchase program may be effected through a variety of methods, including open market or privately negotiated purchases. The timing and amount of shares repurchased will depend on the stock price, business and market conditions, corporate and regulatory requirements, alternative investment opportunities, acquisition opportunities, and other factors. We are not obligated to repurchase any specific amount of shares of common stock, and the stock repurchase program may be suspended or terminated at any time.

Equity Incentive Award Plan

2012 Plan

In connection with the acquisition of BRCM, we assumed the BRCM 2012 Stock Incentive Plan (the "Original 2012 Plan") and outstanding unvested RSUs originally granted by BRCM under the Original 2012 Plan that were held by continuing employees. During the second quarter of fiscal year 2021, our stockholders approved the amendment and restatement of the Original 2012 Plan, now called Broadcom Inc. 2012 Stock Incentive Plan (the "Amended 2012 Plan"). Under the Amended 2012 Plan, we may grant to employees stock options and stock appreciation rights with an exercise price that is no less than the fair market value on the date of grant, restricted stock awards and RSUs. No participant may be granted such awards for more than an aggregate of 4 million shares in any fiscal year. Equity awards granted under the Amended 2012 Plan generally vest over four years. The Amended 2012 Plan reduced the number of shares available for new equity award grants to 20 million shares and removed the annual share replenishment provision provided under the Original 2012 Plan. We will make no further equity award grants under our LSI Corporation 2003 Equity Incentive Plan, which we assumed in connection with the acquisition of LSI

Corporation. As of October 31, 2021, 21 million shares remained available for issuance under the Amended 2012 Plan.

We may grant market-based RSUs with both a service condition and a market condition as part of our equity compensation programs. The market-based RSUs generally vest over four years, subject to satisfaction of market conditions. During fiscal years 2021, 2020 and 2019, we granted market-based RSUs under which grantees may receive the number of shares ranging from 0% to 300% of the original grant at vesting based upon the total stockholder return ("TSR") on our common stock on an absolute basis and as compared to the TSR of an index group of companies.

Amendment to the RSU Vesting Schedule

During fiscal year 2019, the Compensation Committee of our Board of Directors approved an amendment to the vesting of time-based RSUs (other than those assumed in an acquisition), held by approximately 16,500 employees below the vice president level, from an annual vesting cycle to a quarterly vesting cycle.

Employee Stock Purchase Plan

The ESPP provides eligible employees with the opportunity to acquire an ownership interest in us through periodic payroll deductions, based on a 6-month look-back period, at a price equal to the lesser of 85% of the fair market value of our common stock at either the beginning or the end of the relevant offering period. The ESPP is structured as a qualified employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986. However, the ESPP is not intended to be a qualified pension, profit sharing or stock bonus plan under Section 401(a) of the Internal Revenue Code of 1986 and is not subject to the provisions of the Employee Retirement Income Security Act of 1974.

Stock-Based Compensation Expense

	Fiscal Year		
	2021	**2020**	**2019**
		(In millions)	
Cost of products sold	$ 78	$ 109	$ 120
Cost of subscriptions and services	65	50	43
Research and development	1,199	1,419	1,532
Selling, general and administrative	362	398	490
Total stock-based compensation expense [(a)]	$ 1,704	$ 1,976	$ 2,185
Estimated income tax benefits for stock-based compensation	$ 283	$ 345	$ 400
Excess income tax benefits for stock-based awards exercised or released	$ 310	$ 147	$ 232

(a) Fiscal year 2019 stock-based compensation expense does not include $75 million restructuring charges for accelerated vesting of assumed equity awards held by employees terminated in connection with the CA Merger.

We have assumed an annualized forfeiture rate for RSUs of 5%. We will recognize additional expense if actual forfeitures are lower than we estimated, and will recognize a benefit if actual forfeitures are higher than we estimated.

During the first quarter of fiscal year 2019, the Compensation Committee of our Board of Directors approved a broad-based program of multi-year equity grants of time- and market-based RSUs (the "Multi-Year Equity Awards") in lieu of our annual employee equity awards historically granted on March 15 of each year. Each Multi-Year Equity Award vests on the same basis as four annual grants made March 15 of each year, beginning in fiscal year 2019, with successive four-year vesting periods. Stock-based compensation expense related to the Multi-Year Equity Awards was $816 million, $902 million and $890 million for fiscal years 2021, 2020 and 2019, respectively.

In connection with the amendment to the vesting of certain time-based RSUs from an annual cycle to a quarterly cycle, we recognized approximately $140 million in incremental compensation cost during fiscal year 2019.

As of October 31, 2021, the total unrecognized compensation cost related to unvested stock-based awards was $2,967 million, which is expected to be recognized over the remaining weighted-average service period of 2.9 years.

The following table summarizes the weighted-average assumptions utilized to calculate the fair value of market-based awards granted in the periods presented:

	Fiscal Year		
	2021	**2020**	**2019**
Risk-free interest rate	0.3 %	1.2 %	2.7 %
Dividend yield	3.0 %	4.7 %	4.4 %
Volatility	39.0 %	31.2 %	33.0 %
Expected term (in years)	3.4	4.0	4.0

The risk-free interest rate was derived from the average U.S. Treasury Strips rate, which approximated the rate in effect appropriate for the term at the time of grant.

The dividend yield was based on the historical and expected dividend payouts as of the respective award grant dates.

The volatility was based on our own historical stock price volatility over the period commensurate with the expected life of the awards and the implied volatility of a 180-day call option on our own common stock measured at a specific date.

The expected term was commensurate with the awards’ contractual terms.

Restricted Stock Unit Awards

A summary of time- and market-based RSU activity is as follows:

	Number of RSUs Outstanding	Weighted-Average Grant Date Fair Value Per Share
	(In millions, except per share data)	
Balance as of November 4, 2018	18	$ 195.50
Assumed in CA Merger	1	$ 206.14
Granted	33	$ 183.64
Vested	(10)	$ 192.28
Forfeited	(2)	$ 182.80
Balance as of November 3, 2019	40	$ 188.52
Granted	3	$ 252.36
Vested	(8)	$ 210.84
Forfeited	(3)	$ 198.17
Balance as of November 1, 2020	32	$ 188.35
Granted	2	$ 408.69
Vested	(8)	$ 214.15
Forfeited	(3)	$ 189.84
Balance as of October 31, 2021	23	$ 200.38

The aggregate fair value of time- and market-based RSUs that vested in fiscal years 2021, 2020 and 2019 was $3,715 million, $2,254 million and $2,958 million, respectively, which represented the market value of our common stock on the date that the RSUs vested. The number of RSUs vested included shares of common stock that we withheld for settlement of employees’ tax obligations due upon the vesting of RSUs.

Stock Option Awards

As of October 31, 2021, our stock options outstanding were not material. The aggregate intrinsic value of stock options exercised in fiscal years 2021, 2020 and 2019 was $339 million, $917 million and $761 million, respectively.

12. Income Taxes

Components of Income from Continuing Operations Before Income Taxes

The following table presents the components of income from continuing operations before income taxes for financial reporting purposes:

	Fiscal Year		
	2021	2020	2019
	(In millions)		
Domestic loss	$ (3,103)	$ (4,221)	$ (4,116)
Foreign income	9,868	6,664	6,342
Income from continuing operations before income taxes	$ 6,765	$ 2,443	$ 2,226

Components of Provision for (Benefit from) Income Taxes

The provision for income taxes in fiscal year 2021 was primarily due to higher income from continuing operations, offset in part by excess tax benefits from stock-based awards, a benefit from foreign derived intangible income, and the recognition of gross unrecognized tax benefits as a result of lapses of statutes of limitations and audit settlements.

The benefit from income taxes in fiscal year 2020 was primarily due to jurisdictional mix of income and expense, the recognition of gross uncertain tax benefits as a result of lapses of statutes of limitations, the remeasurement of certain foreign deferred tax assets and liabilities, and excess tax benefits from stock-based awards.

The benefit from income taxes in the fiscal year 2019 was primarily due to excess tax benefits from stock-based awards, the recognition of gross unrecognized tax benefits as a result of audit settlements and lapses of statutes of limitations net of increases in balances related to tax positions taken during the year, deferred tax remeasurement in state and foreign jurisdictions, internal reorganizations, and the partial release of our valuation allowance as a result of the CA Merger, partly offset by a change in estimate of our fiscal year 2018 provision resulting from regulations issued related to the U.S. Tax Cuts and Jobs Act (“2017 Tax Reform Act”).

We have obtained several tax incentives from the Singapore Economic Development Board which provide that qualifying income earned in Singapore is subject to tax incentives or reduced rates of Singapore income tax. Each tax incentive is separate and distinct from the others and may be granted, withheld, extended, modified, truncated, complied with, or terminated independently without any effect on the other incentives. Subject to our compliance with the conditions specified in these incentives and legislative developments, the Singapore tax incentive is scheduled to expire in November 2025.

We have also obtained a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. The tax holiday that we negotiated in Malaysia is also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with any such conditions specified, we will lose the related tax benefits and we could be required to refund previously realized material tax benefits.

Before taking into consideration the effects of the 2017 Tax Reform Act and other indirect tax impacts, the effect of these tax incentives and tax holiday was to decrease the provision for income taxes by approximately $1,156 million for fiscal year 2021 and increase the benefit from income taxes by approximately $833 million and $923 million for fiscal years 2020 and 2019, respectively.

Significant components of provision for (benefit from) income taxes are as follows:

	Fiscal Year		
	2021	**2020**	**2019**
		(In millions)	
Current tax expense (benefit from):			
Federal	$ 446	$ 7	$ (49)
State	46	51	(16)
Foreign	534	506	342
	1,026	564	277
Deferred tax expense (benefit from):			
Federal	(876)	(627)	(497)
State	(114)	(161)	(113)
Foreign	(7)	(294)	(177)
	(997)	(1,082)	(787)
Total provision for (benefit from) income taxes	$ 29	$ (518)	$ (510)

Table of Contents

Rate Reconciliation

	Fiscal Year		
	2021	2020	2019
Statutory tax rate	21.0 %	21.0 %	21.0 %
State, net of federal benefit	(0.8)	(3.6)	(4.6)
Foreign income taxed at different rates	(22.8)	(48.6)	(52.5)
Deemed inclusion of foreign earnings	12.7	23.3	25.9
Foreign-derived intangible income deduction	(3.1)	(1.5)	—
Deferred taxes on unremitted foreign earnings	(0.7)	(1.1)	1.9
Excess tax benefits from stock-based compensation	(4.6)	(6.0)	(10.4)
Research and development credit	(2.3)	(4.3)	(7.6)
Other, net	1.0	(0.4)	(1.7)
2017 Tax Reform Act	—	—	5.1
Effective tax rate on income before income taxes	0.4 %	(21.2)%	(22.9)%

Summary of Deferred Income Taxes

	October 31, 2021	November 1, 2020
	(In millions)	
Deferred income tax assets:		
Net operating loss, credit and other carryforwards	$ 1,774	$ 1,773
Deferred revenue	1,332	529
Employee stock awards	192	273
Other deferred income tax assets	446	449
Gross deferred income tax assets	3,744	3,024
Less: valuation allowance	(1,782)	(1,707)
Deferred income tax assets	1,962	1,317
Deferred income tax liabilities:		
Depreciation and amortization	847	1,477
Unamortized discount and issuance costs	374	57
Foreign earnings not indefinitely reinvested	73	112
Deferred income tax liabilities	1,294	1,646
Net deferred income tax assets (liabilities)	$ 668	$ (329)

Deferred income taxes reflect the net effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their basis for income tax purposes and the tax effects of net operating losses and tax credit carryforwards. The increase in net deferred income tax assets was primarily a result of an increase in deferred revenue and amortization of acquisition-related intangible assets, offset in part by unamortized discount and issuance costs included in the consolidated statement of operations.

In connection with the acquisition of the Symantec Business in November 2019, we established $28 million of net deferred tax assets primarily as a result of the difference in book basis and tax basis related to acquired assets. In connection with the CA Merger in November 2018, we established $2,434 million of net deferred tax liabilities on the excess of the book basis over the tax basis of acquired identified intangible assets and investments in certain foreign subsidiaries that had not been indefinitely reinvested, partially offset by acquired tax attributes.

We continue to indefinitely reinvest $2,291 million of certain accumulated foreign earnings. The unrecognized deferred income tax liability related to these earnings is estimated to be $241 million. All other current and future earnings of all our foreign subsidiaries are not considered permanently reinvested.

The increase in the valuation allowance to $1,782 million in fiscal year 2021 from $1,707 million in fiscal year 2020 was primarily due to state and foreign deferred tax assets arising from credits and net operating loss carryforwards not expected to be realized.

As of October 31, 2021, we had U.S. federal net operating loss carryforwards of $51 million, U.S. state net operating loss carryforwards of $2,610 million and foreign net operating loss carryforwards of $782 million, all of which expire in various years beginning fiscal year 2022. We also had $83 million, $1,896 million and $43 million of U.S. federal, state, and foreign research and development tax credits, respectively. U.S. federal, state and foreign research and development credits, if not utilized, begin to expire in fiscal years 2022, 2022 and 2023, respectively.

Utilization of our net operating loss and tax credit carryforwards may be subject to substantial annual limitations due to the ownership change limitations provided by the Internal Revenue Code and similar state provisions. Such annual limitations could result in the expiration of the net operating loss and tax credit carryforwards before their utilization. The events that may cause ownership changes include, but are not limited to, a cumulative stock ownership change of greater than 50% over a three year period.

Uncertain Tax Positions

Gross unrecognized tax benefits increased by $282 million during fiscal year 2021, resulting in gross unrecognized tax benefits of $5,030 million as of October 31, 2021. Gross unrecognized tax benefits increased by $326 million during fiscal year 2020, resulting in gross unrecognized tax benefits of $4,748 million as of November 1, 2020. Gross unrecognized tax benefits increased by $392 million during fiscal year 2019, resulting in gross unrecognized tax benefits of $4,422 million as of November 3, 2019.

We recognize interest and penalties related to unrecognized tax benefits within the provision for (benefit from) income taxes. Accrued interest and penalties were included within other long-term liabilities. During fiscal years 2021 and 2020, we recognized interest and penalties of $46 million and $37 million, respectively, within the provision for (benefit from) income taxes. There was no amount recognized during fiscal year 2019. As of October 31, 2021 and November 1, 2020, the combined amount of cumulative accrued interest and penalties was approximately $386 million and $340 million, respectively.

The following table reconciles the beginning and ending balance of gross unrecognized tax benefits:

	Fiscal Year		
	2021	**2020**	**2019**
		(In millions)	
Beginning balance	$ 4,748	$ 4,422	$ 4,030
Lapses of statutes of limitations	(58)	(95)	(36)
Increases in balances related to tax positions taken during prior periods (including those related to acquisitions made during the year)	41	98	467
Decreases in balances related to tax positions taken during prior periods	—	(14)	(270)
Increases in balances related to tax positions taken during current period	337	379	460
Decreases in balances related to settlements with taxing authorities	(38)	(42)	(229)
Ending balance	$ 5,030	$ 4,748	$ 4,422

A portion of our unrecognized tax benefits will affect our effective tax rate if they are recognized upon favorable resolution of the uncertain tax positions. As of October 31, 2021 and November 1, 2020, approximately $5,416 million and $5,088 million of the unrecognized tax benefits and accrued interest and penalties would affect our effective tax rate, respectively.

We are subject to U.S. income tax examination for fiscal years 2015 and later. Certain of our acquired companies are subject to tax examinations in major jurisdictions outside of the U.S. for fiscal years 2008 and later. It is possible that our existing unrecognized tax benefits may change up to $289 million as a result of lapses of the statute of limitations for certain audit periods and/or audit examinations expected to be completed within the next 12 months.

13. Segment Information

Reportable Segments

During the first quarter of fiscal year 2020, we updated our organizational structure resulting in two reportable segments: semiconductor solutions and infrastructure software. Each segment represents a component for which separate financial information is available that is utilized on a regular basis by the CODM in determining how to allocate resources and evaluate performance. The reportable segments are determined based on several factors including, but not limited to, customer base, homogeneity of products, technology, delivery channels and similar economic characteristics.

Semiconductor solutions. We provide semiconductor solutions for managing the movement of data in data center, telecom, enterprise and embedded networking applications. We provide a broad variety of radio frequency semiconductor devices, wireless connectivity solutions and custom touch controllers for mobile applications. We also provide semiconductor solutions for enabling the set-top box and broadband access markets and for enabling secure movement of digital data to and from host machines, such as servers, personal computers and storage systems, to the underlying storage devices, such as hard disk drives and solid state drives. We also provide a broad variety of products for the general industrial and automotive markets. Our semiconductor solutions segment also includes our IP licensing.

Infrastructure software. We provide a portfolio of software solutions that enables customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. Our portfolio of industry-leading infrastructure and security software is designed to modernize, optimize, and secure the most complex hybrid environments, enabling scalability, agility, automation, insights, resiliency and security. We also offer mission critical FC SAN products and related software.

Our CODM assesses the performance of each segment and allocates resources to each segment based on net revenue and operating results and does not evaluate each segment using discrete asset information. Operating results by segment include items that are directly attributable to each segment and also include shared expenses such as global operations, including manufacturing support, logistics and quality control, expenses associated with selling, general and administrative activities, facilities and IT expenses. Shared expenses are primarily allocated based on revenue and headcount.

During the fourth quarter of our fiscal year 2020, we refined our allocation methodology for certain selling, general and administrative expenses to more closely align these costs with the segment benefiting from the shared expenses. Prior period segment results have been recast to conform to the current presentation.

Unallocated Expenses

Unallocated expenses include amortization of acquisition-related intangible assets, stock-based compensation expense, restructuring, impairment and disposal charges, acquisition-related costs, charges related to inventory step-up to fair value, and other costs, which are not used in evaluating the results of, or in allocating resources to, our segments. Acquisition-related costs include transaction costs and any costs directly related to the acquisition and integration of acquired businesses.

Depreciation expense directly attributable to each reportable segment is included in operating results for each segment. However, the CODM does not evaluate depreciation expense by operating segment and, therefore, it is not separately presented. There was no inter-segment revenue for any of the periods presented. The accounting policies of the segments are the same as those described in the summary of significant accounting policies.

	Fiscal Year		
	2021	2020	2019
		(In millions)	
Net revenue:			
Semiconductor solutions	$ 20,383	$ 17,267	$ 17,441
Infrastructure software	7,067	6,621	5,156
Total net revenue	$ 27,450	$ 23,888	$ 22,597
Operating income:			
Semiconductor solutions	$ 10,976	$ 8,576	$ 8,538
Infrastructure software	4,936	4,363	3,391
Unallocated expenses	(7,393)	(8,925)	(8,485)
Total operating income	$ 8,519	$ 4,014	$ 3,444

Geographic Information

Net revenue by country is based primarily on the geographic shipment or delivery location as specified by the distributors, OEMs, contract manufacturers, channel partners, or software customers who purchased our products or services. For the majority of our products, title and control transfer to our customers in Penang, Malaysia. The products are then transported to the customer specific locations. Net revenue from the United States for fiscal years 2021, 2020 and 2019 was $5,285 million, $4,778 million and $4,235 million, respectively. Net revenue from China (including Hong Kong) for fiscal years 2021, 2020 and 2019 was $9,752 million, $7,808 million and $8,056 million, respectively. Net revenue from Singapore for fiscal years 2021 and 2019 was $2,754 million and $2,507 million, respectively (the amount was less than 10% for fiscal year 2020). Net revenue from other foreign countries for fiscal years 2021, 2020 and 2019 was $9,659 million, $11,302 million and $7,799 million, respectively. These geographic delivery locations are not necessarily indicative of the geographic location of our end customers or the country in which our end customers sell devices containing our products. For example, we believe a substantial portion of our products shipped or delivered to China (including Hong Kong) is included in devices sold by our end customers in the United States and Europe.

Long-lived assets include property, plant and equipment and are based on the physical location of the assets.

	October 31, 2021	November 1, 2020
	(In millions)	
Long-lived assets:		
United States	$ 1,540	$ 1,659
Taiwan	313	285
Other	495	565
Total long-lived assets	$ 2,348	$ 2,509

Significant Customer Information

We sell our products through our direct sales force and a select network of distributors and channel partners globally. No customer accounted for more than 10% of our net accounts receivable balance as of October 31, 2021 or November 1, 2020. During fiscal years 2021, 2020 and 2019, one customer accounted for 18%, 13% and 17% of our net revenue, respectively. Revenue from this customer was included in our semiconductor solutions segment.

14. Commitments and Contingencies

Commitments

The following table summarizes contractual obligations and commitments as of October 31, 2021:

Fiscal Year:	Purchase Commitments	Other Contractual Commitments
	(In millions)	
2022	$ 1,286	$ 738
2023	82	178
2024	—	119
2025	—	25
2026	—	48
Thereafter	—	1
Total	$ 1,368	$ 1,109

Purchase Commitments. Represents unconditional purchase obligations that include agreements to purchase goods or services, primarily inventory, that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable price provisions, and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty.

Other Contractual Commitments. Represents amounts payable pursuant to agreements related to IT, human resources, and other service agreements.

Due to the inherent uncertainty with respect to the timing of future cash outflows associated with our unrecognized tax benefits at October 31, 2021, we are unable to reliably estimate the timing of cash settlement with the respective taxing authorities. Therefore, $3,407 million of unrecognized tax benefits and accrued interest and penalties classified within other long-term liabilities on our consolidated balance sheet as of October 31, 2021 have been excluded from the table above.

Contingencies

From time to time, we are involved in litigation that we believe is of the type common to companies engaged in our lines of business, including commercial disputes, employment issues, tax disputes and disputes involving claims by third parties that our activities infringe their patent, copyright, trademark or other IP rights, as well as regulatory investigations or inquiries. Legal proceedings and regulatory investigations or inquiries are often complex, may require the expenditure of significant funds and other resources, and the outcome of such proceedings is inherently uncertain, with material adverse outcomes possible. IP property claims generally involve the demand by a third-party that we cease the manufacture, use or sale of the allegedly infringing products, processes or technologies and/or pay substantial damages or royalties for past, present and future use of the allegedly infringing IP. Claims that our products or processes infringe or misappropriate any third-party IP rights (including claims arising through our contractual indemnification of our customers) often involve highly complex, technical issues, the outcome of which is inherently uncertain. Moreover, from time to time, we pursue litigation to assert our IP rights. Regardless of the merit or resolution of any such litigation, complex IP litigation is generally costly and diverts the efforts and attention of our management and technical personnel.

Lawsuits Relating to California Institute of Technology

California Institute of Technology ("Caltech") filed a complaint against Broadcom and Apple Inc. on May 26, 2016 in the United States District Court for the Central District of California (the "U.S. Central District Court"), and an amended complaint adding Cypress Semiconductor Corporation as a defendant on August 15, 2016. The amended complaint alleged that chips that support certain error correction codes as specified in IEEE Standards 802.11n and 802.11ac willfully infringed four patents related to error correction coding: U.S. Patent Nos. 7,116,710; 7,421,032; 7,916,781; and 8,284,833 ("'833 patent"). Prior to trial, Caltech dismissed its claims against Cypress and withdrew its infringement allegations as to '833 patent. The complaint sought a preliminary and permanent injunction, damages, pre- and post-judgment interest, as well as attorneys' fees, costs, and expenses. The trial was held in January 2020, and on January 29, 2020, the jury issued its verdict finding infringement and awarding Caltech past damages of $270.2 million from Broadcom and $837.8 million from Apple, for which Apple is seeking indemnification from Broadcom. On August 3, 2020, the U.S. Central District Court issued its judgment, awarding Caltech past damages in the amounts awarded by the jury, as well as pre- and post-judgment interest. Additionally, the U.S. Central District Court awarded Caltech an unspecified amount of ongoing royalties to be determined after the anticipated appeals process is resolved. Neither the jury nor the U.S. Central District Court found willful infringement, which if it had, could have resulted in enhanced damages up to three times the amount awarded. Broadcom and Apple have appealed to the United States Court of Appeals for the Federal Circuit (the "Federal Circuit Court") and oral arguments were heard on September 1, 2021. We are unable to predict the date on which the Federal Circuit Court will issue its decision.

We believe that the evidence and the law do not support the U.S. Central District Court's findings of infringement or the award of damages, including ongoing royalties, and do not believe a material loss is probable at this time. We believe that there are strong grounds for appeal, and we intend to vigorously challenge the U.S. Central District Court's judgment and rulings. As a result, we have not recorded a reserve with respect to this litigation, in accordance with the applicable accounting standards. We believe the low end of the possible range of loss is zero, but we cannot reasonably estimate the ultimate outcome, as a number of factors (including the appeal by Broadcom and Apple) could significantly change the assessment of damages.

Other Matters

In addition to the matters discussed above, we are currently engaged in a number of legal actions in the ordinary course of our business.

Contingency Assessment

We do not believe, based on currently available facts and circumstances, that the final outcome of any pending legal proceedings or ongoing regulatory investigations, taken individually or as a whole, will have a material adverse effect on our consolidated financial statements. However, lawsuits may involve complex questions of fact and law and may require the expenditure of significant funds and other resources to defend. The results of litigation or regulatory investigations are inherently uncertain, and material adverse outcomes are possible. From time to time, we may enter into confidential discussions regarding the potential settlement of such lawsuits. Any settlement of pending litigation could require us to incur substantial costs and other ongoing expenses, such as future royalty payments in the case of an IP dispute.

During the periods presented, no material amounts have been accrued or disclosed in the accompanying consolidated financial statements with respect to loss contingencies associated with any other legal proceedings or regulatory investigations, as potential losses for such matters are not considered probable and ranges of losses are not reasonably estimable. These matters are subject to many uncertainties and the ultimate outcomes are not predictable. There can be no assurances that the actual amounts required to satisfy any liabilities arising from the matters described above will not have a material adverse effect on our consolidated financial statements.

Table of Contents

Other Indemnifications

As is customary in our industry and as provided for in local law in the U.S. and other jurisdictions, many of our standard contracts provide remedies to our customers and others with whom we enter into contracts, such as defense, settlement, or payment of judgment for IP claims related to the use of our products. From time to time, we indemnify customers, as well as our suppliers, contractors, lessors, lessees, companies that purchase our businesses or assets and others with whom we enter into contracts, against combinations of loss, expense, or liability arising from various triggering events related to the sale and the use of our products, the use of their goods and services, the use of facilities and state of our owned facilities, the state of the assets and businesses that we sell and other matters covered by such contracts, usually up to a specified maximum amount. In addition, from time to time we also provide protection to these parties against claims related to undiscovered liabilities, additional product liabilities or environmental obligations. In our experience, claims made under such indemnifications are rare and the associated estimated fair value of the liability is not material.

15. Restructuring, Impairment and Disposal Charges

Restructuring Charges

The following is a summary of significant restructuring expense recognized primarily in operating expenses:

- During fiscal year 2021, we initiated cost reduction activities associated with plans to align our workforce with strategic business activities and to improve efficiencies in our operations. As a result, we recognized $149 million of restructuring expense primarily related to employee termination costs during fiscal year 2021. We have substantially completed these restructuring activities.
- Restructuring expense during fiscal year 2020 was primarily related to employee termination and other cost reduction activities related to the acquisition of the Symantec Business of $174 million and the CA Merger of $28 million. We have substantially completed the restructuring activities related to the acquisition of the Symantec Business and the CA Merger.

The following table summarizes the significant activities within, and components of, the restructuring liabilities:

	Employee Termination Costs	Other Exit Costs[a]	Total
	(In millions)		
Balance as of November 4, 2018	$ 16	$ 6	$ 22
Liabilities assumed from CA	29	38	67
Restructuring charges	586	160	746
Utilization	(562)	(165)	(727)
Balance as of November 3, 2019	69	39	108
Restructuring charges[b]	186	47	233
Utilization	(221)	(50)	(271)
Effect of adoption of Topic 842[c]	—	(36)	(36)
Balance as of November 1, 2020	34	—	34
Restructuring charges	100	13	113
Utilization	(130)	(13)	(143)
Balance as of October 31, 2021[d]	$ 4	$ —	$ 4

(a) Included $30 million and $134 million of restructuring expense related to the write-down of certain lease-related ROU assets and other lease-related charges during fiscal years 2020 and 2019, respectively.

(b) Included $19 million of restructuring expense related to discontinued operations recognized during fiscal year 2020, which was included in loss from discontinued operations.

(c) Upon adoption of Topic 842, certain restructuring lease liabilities were required to be recognized as a reduction to the corresponding ROU assets.

(d) The majority of the employee termination costs balance is expected to be paid within the next six months.

Restructuring, impairment and disposal charges in our consolidated statement of operations for the fiscal year ended October 31, 2021 included $36 million for the write-down of certain lease-related ROU assets and other lease-related charges. As of October 31, 2021, short-term and long-term lease liabilities included $52 million of liabilities related to restructuring activities.

Impairment and Disposal Charges

During fiscal years 2021 and 2020, impairment and disposal charges of $16 million and $19 million, respectively, primarily related to leasehold improvements. During fiscal year 2019, impairment and disposal charges of $67 million primarily related to property, plant and equipment.

16. Subsequent Events

Preferred Stock Cash Dividends Declared

On December 7, 2021, our Board of Directors declared a quarterly cash dividend of $20.00 per share on our Mandatory Convertible Preferred Stock, payable on December 31, 2021 to stockholders of record on December 15, 2021.

Common Stock Cash Dividends Declared

On December 7, 2021, our Board of Directors declared a quarterly cash dividend of $4.10 per share on our common stock, payable on December 31, 2021 to stockholders of record on December 22, 2021.

Schedule II — Valuation and Qualifying Accounts

	Balance at Beginning of Period	Additions to Allowances	Charges Utilized/ Write-offs	Balance at End of Period
	(In millions)			
Accounts receivable allowances:				
Distributor credit allowances [1]				
Fiscal year ended October 31, 2021	$ 149	$ 756	$ (777)	$ 128
Fiscal year ended November 1, 2020	$ 153	$ 696	$ (700)	$ 149
Fiscal year ended November 3, 2019	$ 151	$ 705	$ (703)	$ 153
Other accounts receivable allowances [2]				
Fiscal year ended October 31, 2021	$ 28	$ 14	$ (40)	$ 2
Fiscal year ended November 1, 2020	$ 38	$ 84	$ (94)	$ 28
Fiscal year ended November 3, 2019	$ 12	$ 99	$ (73)	$ 38
Income tax valuation allowances:				
Fiscal year ended October 31, 2021	$ 1,707	$ 121	$ (46)	$ 1,782
Fiscal year ended November 1, 2020	$ 1,563	$ 149	$ (5)	$ 1,707
Fiscal year ended November 3, 2019	$ 1,347	$ 284	$ (68)	$ 1,563

(1) Distributor credit allowances relate to price adjustments and other allowances.

(2) Other accounts receivable allowances primarily include sales returns and allowance for doubtful accounts.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer (“CEO”) and Chief Financial Officer (“CFO”), evaluated the effectiveness of our disclosure controls and procedures as of October 31, 2021. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of October 31, 2021, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by the Board, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of us are being made only in accordance with authorizations of management and directors; and
- 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 financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

Our management assessed the effectiveness of our internal control over financial reporting as of October 31, 2021. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control-Integrated Framework* (2013). Based on this assessment, our management concluded that, as of October 31, 2021, our internal control over financial reporting is effective based on those criteria.

The effectiveness of our internal control over financial reporting, as of October 31, 2021 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included in Part II, Item 8. of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fourth quarter ended October 31, 2021 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. Although we have modified our workplace practices globally due to the COVID-19 pandemic, resulting in some of our employees working remotely, this has not meaningfully affected our internal controls over financial reporting. We are continually monitoring and assessing the COVID-19 situation on our internal controls to minimize the impact on their design and operating effectiveness.

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 Item 10 is incorporated herein by reference from sections entitled "Proposal 1 — Election of Directors" and "Corporate Governance" in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders. Our executive officers are listed at the end of Item 1 of this Annual Report on Form 10-K.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is incorporated herein by reference from sections entitled "Director Compensation", "Compensation Discussion and Analysis", "Executive Compensation", "Compensation Committee Report" and "Corporate Governance — Compensation Committee Interlocks and Insider Participation" in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 12 is incorporated herein by reference from sections entitled "Stockholder Information — Security Ownership of Certain Beneficial Owners, Directors and Executive Officers" and "Equity Compensation Plan Information" in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Item 13 is incorporated herein by reference from sections entitled "Corporate Governance" and "Certain Relationships and Related Party Transactions" in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 is incorporated herein by reference from the section entitled "Proposal 2 — Ratification of Appointment of Our Independent Registered Public Accounting Firm" in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The following consolidated financial statements are included in Item 8 of this Annual Report on Form 10-K:

2. Financial Statement Schedules

The financial statement schedule of the Registrant and its subsidiaries for fiscal years 2021, 2020 and 2019 required by Item 15(a) (Schedule II, Valuation and Qualifying Accounts) is included in Item 8 of this Annual Report on Form 10-K:

Schedules not filed have been omitted because they are not applicable, are not required or the information required to be set forth therein is included in the financial statements or notes thereto.

3. Exhibits

The documents set forth below are filed herewith or incorporated by reference to the location indicated.

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
2.1#	Agreement and Plan of Merger, dated as of July 11, 2018, by and among Broadcom, Inc., Collie Acquisition Corp. and CA, Inc.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	July 12, 2018	
2.2#	Asset Purchase Agreement, dated as of August 8, 2019, by and between Broadcom Inc. and Symantec Corporation.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	August 9, 2019	
2.3#	APA Letter Agreement, dated as of October 1, 2020, by and between Broadcom Inc. and NortonLifeLock Inc.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 18, 2020	
3.1	Amended and Restated Certificate of Incorporation.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
3.2	Certificate of Designation of the 8.00% Mandatory Convertible Preferred Stock, Series A.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2019	
3.3	Amended and Restated Bylaws.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
4.1	Form of Common Stock Certificate.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 14, 2018	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein: Form	Filing Date	Filed Herewith
4.2	Form of Certificate of the 8.00% Mandatory Convertible Preferred Stock, Series A (included in Exhibit 3.2).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2019	
4.3	Description of Common Stock.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 20, 2019	
4.4	Description of 8.00% Mandatory Convertible Preferred Stock, Series A.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 20, 2019	
4.5	Indenture, dated as of January 19, 2017, by and among the Broadcom Corporation and Broadcom Cayman Finance Limited ("Co-Issuers"), the guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.6	Supplement Indenture to the January 2017 Indenture, dated as of April 9, 2018.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 9, 2018	
4.7	Second Supplement Indenture to the January 2017 Indenture, dated as of January 25, 2019.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 25, 2019	
4.8	Form of 2.375% Senior Note due 2020 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.9	Form of 3.000% Senior Note due 2022 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.10	Form of 3.625% Senior Note due 2024 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.11	Form of 3.875% Senior Note due 2027 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.12	Indenture, dated as of October 17, 2017, by and among the Co-Issuers, the guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.13	Supplement Indenture to October 2017 Indenture, dated as of April 9, 2018.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2018	
4.14	Second Supplement Indenture to October 2017 Indenture, dated as of January 25, 2019.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 25, 2019	
4.15	Form of 2.200% Senior Note due 2021 (included in Exhibit 4.12).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.16	Form of 2.650% Senior Note due 2023 (included in Exhibit 4.12).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
4.19	Indenture, dated as of April 5, 2019, by and among the Company, as Issuer, Broadcom Technologies Inc., Broadcom Corporation and Broadcom Cayman Finance Limited (the "2019 Guarantors"), and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.20	Form of 3.125% Senior Note due 2021 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.21	Form of 3.125% Senior Note due 2022 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.22	Form of 3.625% Senior Note due 2024 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.23	Form of 4.250% Senior Note due 2026 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.24	Form of 4.750% Senior Note due 2029 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.25	Registration Rights Agreement, dated as of April 5, 2019, by and among the Company, the 2019 Guarantors and Merrill Lynch, Pierce, Fenner & Smith Incorporated and J.P. Morgan Securities LLC, as representatives of the several initial purchasers of the April 2019 Notes.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.26	Indenture, dated as of April 9, 2020, by and among the Company, as Issuer, Broadcom Technologies Inc. and Broadcom Corporation (the "2020 Guarantors"), and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.27	Form of 4.700% Senior Notes due 2025 (included in Exhibit 4.26).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.28	Form of 5.000% Senior Notes due 2030 (included in Exhibit 4.26).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.29	Registration Rights Agreement, dated as of April 9, 2020, by and among the Company, the 2020 Guarantors and J.P. Morgan Securities LLC, as representative of the several initial purchasers of the April 2020 Senior Notes.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.30	Indenture, dated as of May 8, 2020, by and among the Company, as Issuer, the 2020 Guarantors, and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.31	Form of 2.250% Senior Notes due	Broadcom Inc. Current	May 8,	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
4.34	Form of 4.300% Senior Notes due 2032 (included in Exhibit 4.30).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.35	Registration Rights Agreement, dated as of May 8, 2020, by and among the Company, the 2020 Guarantors and Citigroup Global Markets Inc., HSBC Securities (USA) Inc., J.P. Morgan Securities LLC and Wells Fargo Securities, LLC, as representatives of the several initial purchasers of the May 2020 Senior Notes.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.36	Indenture, dated as of May 21, 2020, by and among the Company, the 2020 Guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.37	Form of 3.459% Senior Notes due 2026 (included in Exhibit 4.36).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.38	Form of 4.110% Senior Notes due 2028 (included in Exhibit 4.36).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.39	Registration Rights Agreement, dated as of May 21, 2020, by and among the Company, the 2020 Guarantors and Barclays Capital Inc. and Credit Suisse Securities (USA) LLC, as dealer-managers in connection with the 2020 Exchange Offers.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.40	Indenture, dated as of January 19, 2021, by and among the Company, the 2020 Guarantors and Wilmington Trust, National Association, as Trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.41	Form of 1.950% Senior Notes due 2028 (included in Exhibit 4.40).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.42	Form of 2.450% Senior Notes due 2031 (included in Exhibit 4.40).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.43	Form of 2.600% Senior Notes due 2033 (included in Exhibit 4.40).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.44	Form of 3.500% Senior Notes due 2041 (included in Exhibit 4.40).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.45	Form of 3.750% Senior Notes due 2051 (included in Exhibit 4.40).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
4.46	Registration Rights Agreement, dated as of January 19, 2021, by and among the Company, the 2020 Guarantors and Morgan Stanley &	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
4.49	Form of 3.469% Senior Notes due 2034 (included in Exhibit 4.47)	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	March 31, 2021	
4.50	Registration Rights Agreement, dated as of March 31, 2021, by and among the Company and BofA Securities, Inc. and HSBC Securities (USA) Inc., as dealer-managers in connection with the March 2021 Senior Notes.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	March 31, 2021	
4.51	Indenture, dated as of September 30, 2021, by and between the Company and Wilmington Trust, National Association, as Trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2021	
4.52	Form of 3.137% Senior Notes due 2035 (included in Exhibit 4.51).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2021	
4.53	Form of 3.187% Senior Notes due 2036 (included in Exhibit 4.51).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2021	
4.54	Registration Rights Agreement, dated as of September 30, 2021, by and among the Company and BNP Paribas Securities Corp., J.P. Morgan Securities LLC and TD Securities (USA) LLC, as dealer-managers in connection with the 2021 Exchange Offers.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2021	
10.1	Form of Indemnification and Advancement Agreement (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.2	Credit Agreement, dated as of May 7, 2019, among Broadcom Inc., the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 7, 2019	
10.3	Credit Agreement, dated as of November 4, 2019, among Broadcom Inc., the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	November 4, 2019	
10.4	Credit Agreement, dated as of January 19, 2021, among the Company, the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 19, 2021	
10.5	Lease Agreement dated August 10, 2017 between Five Point Office Venture I, LLC and Broadcom Corporation.	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.6	First Amendment to Lease Agreement by and between Five Point Office Venture 1, LLC and Broadcom Corporation.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 18, 2020	
10.7*	Settlement and Patent License and Non-Assert Agreement by and between Qualcomm Incorporated and Broadcom Corporation.	Broadcom Corporation Current Report on Form 8-K/A (Commission File No. 000-23993)	July 23, 2009	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
10.10+	LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-195741)	May 6, 2014	
10.11+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.12+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.13+	Broadcom Inc. 2012 Stock Incentive Plan (as amended and restated on April 5, 2021).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 11, 2021	
10.14+	Form of Annual Bonus Plan for Executive Employees.	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.15+	Form of Option Agreement under Avago Technologies Limited 2009 Equity Incentive Plan.	Amendment No. 5 to Avago Technologies Limited Registration Statement on Form S-1 (Commission File No. 333-153127)	July 27, 2009	
10.16+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.17+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.18+	Form of Agreement for Multi-Year Equity Award of Restricted Stock Unit Award under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 6, 2018	
10.19+	Form of Performance Stock Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Award Plan.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 9, 2017	
10.20+	Form of Performance Share Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective March 13, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018	
10.21+	Form of Agreement for Multi-Year Equity Award of Performance Stock Units under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 6, 2018	
10.22+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective December 8, 2020).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 18, 2020	
10.23+	Form of Performance Stock Unit Agreement (Relative TSR) under LSI Corporation 2003 Equity Incentive	Broadcom Inc. Annual Report on Form 10-K (Commission File	December 18, 2020	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.26+	Form of Restricted Stock Unit Award Agreement under Broadcom Inc. 2012 Stock Incentive Plan (effective April 5, 2021).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 11, 2021	
10.27+	Form of Performance Stock Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 9, 2017	
10.28+	Form of Performance Share Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective March 15, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018	
10.29+	Form of Performance Stock Unit Award Agreement under the Broadcom Inc. 2012 Stock Incentive Plan (effective April 5, 2021).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 11, 2021	
10.30+	Performance Stock Unit Award Agreement, dated June 15, 2017, between Broadcom Limited and Hock E. Tan.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	June 19, 2017	
10.31+	Performance Stock Unit Award Agreement, dated April 5, 2021, between Broadcom Inc. and Hock E. Tan.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 11, 2021	
10.32+	Policy on Acceleration of Executive Staff Equity Awards in the Event of Permanent Disability (as amended June 2, 2021).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	June 3, 2021	
10.33+	Policy on Acceleration of Equity Awards in the Event of Death (as amended June 2, 2021).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	June 3, 2021	
10.34+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Hock E. Tan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.35+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Thomas H. Krause, Jr.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.36+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Charlie B. Kawwas.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.37+	Severance Benefits Agreement, dated September 26, 2017, between Broadcom Limited and Mark Brazeal.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.38+	Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Kirsten M. Spears.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.39+	Letter Agreement dated December 8, 2020, between Broadcom Inc. and Kirsten M. Spears.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
21.1	List of Subsidiaries.			X
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.			X

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein: Form	Incorporated by Referenced Herein: Filing Date	Filed Herewith
31.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			X
32.1	Certification of Principal Executive Officer of Broadcom Inc. Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			X
32.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			X
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.			X
101.SCH	XBRL Schema Document			X
101.CAL	XBRL Calculation Linkbase Document			X
101.DEF	XBRL Definition Linkbase Document			X
101.LAB	XBRL Labels Linkbase Document			X
101.PRE	XBRL Presentation Linkbase Document			X
104	Cover Page Interactive Data File - the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.			X

Notes:

+ Indicates a management contract or compensatory plan or arrangement.

Schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Broadcom Inc. hereby undertakes to furnish supplementally copies of any omitted schedules upon request by the SEC.

* Certain information omitted pursuant to a request for confidential treatment filed with the SEC.

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.

BROADCOM INC.

By: **/s/ Hock E. Tan**

Name: Hock E. Tan

Title: President and Chief Executive Officer

Date: December 17, 2021

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Hock E. Tan, Kirsten M. Spears and Mark D. Brazeal, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the Registrant in the capacities indicated and on the dates indicated.

Signature	Title
/s/ Hock E. Tan Hock E. Tan	President and Chief Ex Officer and Direc (Principal Executive O
/s/ Kirsten M. Spears Kirsten M. Spears	Chief Financial Off (Principal Financial Officer Accounting Office
/s/ Henry Samueli Henry Samueli	Chairman of the Board o
/s/ Eddy W. Hartenstein Eddy W. Hartenstein	Lead Independent D
/s/ Diane M. Bryant Diane M. Bryant	Director
/s/ Gayla J. Delly Gayla J. Delly	Director
/s/ Raul F. Fernandez Raul F. Fernandez	Director
/s/ Check Kian Low Check Kian Low	Director
/s/ Justine F. Page Justine F. Page	Director
/s/ Harry L. You Harry L. You	Director

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, DC 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 November 1, 2020

OR

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

For the transition period from to

Broadcom Inc.

Delaware	**1320 Ridder Park Drive San Jose, CA 95131-2313**	**001-38449**	**35-2617337**
(State or Other Jurisdiction of Incorporation or Organization)		**(Commission File Number)**	**(I.R.S. Employer Identification No.)**

(408) 433-8000

(Exact Name of Registrant as Specified in Its Charter

Address of Principal Executive Offices, Including Zip Code

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, $0.001 par value	AVGO	The NASDAQ Global Select Market
8.00% Mandatory Convertible Preferred Stock, Series A, $0.001 par value	AVGOP	The NASDAQ Global Select 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, a 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 voting and non-voting common equity held by non-affiliates as of May 1, 2020, based upon the closing sale price of such shares on The Nasdaq Global Select Market on such date was approximately $101.8 billion.

As of November 27, 2020, there were 406,713,118 shares of our common stock outstanding.

Documents Incorporated by Reference

Information required in response to Part III of this Annual Report on Form 10-K is hereby incorporated by reference from the registrant's definitive Proxy Statement for its 2021 Annual Meeting of Stockholders. Except as expressly incorporated by reference, the registrant's Proxy Statement shall not be deemed to be a part of this Annual Report on Form 10-K. The registrant intends to file its definitive Proxy Statement within 120 days after its fiscal year ended November 1, 2020.

BROADCOM INC.
2020 ANNUAL REPORT ON FORM 10-K

TABLE OF CONTENTS

Table of Contents

PART I

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws and particularly in Item 1: “Business,” Item 1A: “Risk Factors,” Item 3: “Legal Proceedings” and Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this Annual Report on Form 10-K. These statements are indicated by words or phrases such as “anticipate,” “expect,” “estimate,” “seek,” “plan,” “believe,” “could,” “intend,” “will,” and similar words or phrases. These forward-looking statements may include projections of financial information; statements about historical results that may suggest trends for our business; statements of the plans, strategies, and objectives of management for future operations; statements of expectation or belief regarding future events (including any acquisitions we may make), technology developments, our products, product sales, expenses, liquidity, cash flow and growth rates, or enforceability of our intellectual property rights; and the effects of seasonality on our business. Such statements are based on current expectations, estimates, forecasts and projections of our industry performance and macroeconomic conditions, based on management’s judgment, beliefs, current trends and market conditions, and involve risks and uncertainties that may cause actual results to differ materially from those contained in the forward-looking statements. We derive most of our forward-looking statements from our operating budgets and forecasts, which are based upon many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results. Accordingly, we caution you not to place undue reliance on these statements. Material factors that could cause actual results to differ materially from our expectations are summarized and disclosed under “Risk Factors” in Part I, Item 1A of this Annual Report on Form 10-K.

Financial information and results of operations presented relate to (1) Broadcom Inc. for the periods after April 4, 2018 and (2) Broadcom Limited, our predecessor, for the period prior to April 4, 2018. Similarly, unless stated otherwise or the context otherwise requires, references to “Broadcom,” “we,” “our” and “us” mean Broadcom Inc. and its consolidated subsidiaries after April 4, 2018 and, prior to that time, our predecessor. Our fiscal year ends on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. We refer to our fiscal years by the calendar year in which they end. For example, the fiscal year ended November 1, 2020 was a 52-week year.

ITEM 1. BUSINESS

Overview

Broadcom Inc. ("Broadcom") is the successor to Broadcom Pte. Ltd. (formerly Broadcom Limited), a Singapore company, as a result of our redomiciliation to the United States on April 4, 2018. We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Our over 50-year history of innovation dates back to our diverse origins from Hewlett-Packard Company, AT&T, LSI Corporation, Broadcom Corporation ("BRCM"), Brocade Communications Systems LLC ("Brocade"), CA, Inc. ("CA") and Symantec Enterprise Security. Over the years, we have assembled a large team of semiconductor and software design engineers around the world. We maintain design, product and software development engineering resources at locations in the U.S., Asia, Europe and Israel, providing us with engineering expertise worldwide. We strategically focus our research and development resources to address niche opportunities in our target markets and leverage our extensive portfolio of U.S. and other patents, and other intellectual property ("IP") to integrate multiple technologies and create system-on-chip ("SoC") component and software solutions that target growth opportunities. We design products and software that deliver high-performance and provide mission-critical functionality.

We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor ("CMOS") based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. We differentiate ourselves through our high performance design and integration capabilities and focus on developing products for target markets where we believe we can earn attractive margins.

Our infrastructure software solutions enable customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms. Many of the largest companies in the world, including most of the Fortune 500, and many government agencies rely on our software solutions to help manage and secure their on-premise and hybrid cloud environments. Our portfolio of mainframe and BizOps software solutions enables customers to leverage the benefits of agility, automation, insights and security in managing business processes and technology investments. Our Symantec cyber security solutions portfolio, include endpoint, network, information and identity security solutions. We also offer mission critical fibre channel storage area networking ("FC SAN") products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products.

Recent Developments

Acquisition of Symantec's Enterprise Security Business

On November 4, 2019, we completed the purchase of certain assets and assumed certain liabilities of the Symantec Corporation Enterprise Security business (the "Symantec Business") for $10.7 billion in cash, on a cash-free, debt-free basis. The addition of the Symantec Business significantly expanded our infrastructure software solutions as we continue to build one of the world's leading infrastructure technology companies.

Segment Reporting

We updated our organizational structure during the fiscal year ended November 1, 2020 ("fiscal year 2020"), resulting in two reportable segments: semiconductor solutions and infrastructure software. Each segment represents a component for which separate financial information is available that is utilized on a regular basis by the chief operating decision maker in determining how to allocate resources and evaluate performance. The reportable segments are determined based on several factors including, but not limited to, customer base, homogeneity of products, technology, delivery channels and similar economic characteristics.

Our semiconductor solutions segment includes all of our semiconductor solution product lines, as well as our IP licensing. Our infrastructure software segment includes our mainframe, BizOps and cyber security software solutions, and our FC SAN business.

See discussion in the "Results of Operations" section included in Part II, Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations* and Note 13. "Segment Information" included in Part II, Item 8. *Financial Statements and Supplementary Data,* of this Annual Report on Form 10-K for additional segment information. For fiscal year 2020, net revenue included contributions from Symantec Business commencing on November 4, 2019, which are included in the infrastructure software segment. For fiscal year ended November 3, 2019 ("fiscal year 2019"), net revenue included contributions from CA commencing on November 5, 2018, which are included in the infrastructure software segment. For the fiscal year ended November 4, 2018 ("fiscal year 2018"), net revenue included contributions from Brocade commencing on November 17, 2017, which are primarily included in the infrastructure software segment.

Business Strategy

Our strategy is to combine best-of-breed technology leadership in semiconductor and infrastructure software solutions, with unmatched scale, on a common sales and administrative platform to deliver a comprehensive suite of infrastructure technology products to the world's leading business and government customers. We seek to achieve this through responsibly financed acquisitions of category-leading businesses and technologies, as well as investing extensively in research and development, to ensure our products retain their technology leadership. This strategy results in a robust business model designed to drive diversified and sustainable operating and financial results.

Products and Markets

Semiconductor Solutions

Semiconductors are made by imprinting a network of electronic components onto a semiconductor wafer. These devices are designed to perform various functions such as processing, amplifying and selectively filtering electronic signals, controlling electronic system functions and processing, and transmitting and storing data. Our digital and mixed signal products are based on silicon wafers with CMOS transistors offering fast switching speeds and low power consumption, which are both critical design factors for the markets we serve. We also offer analog products, which are based on III-V semiconductor materials that have higher electrical conductivity than silicon, and thus tend to have better performance characteristics in radio frequency ("RF"), and optoelectronic applications. III-V refers to elements from the 3rd and 5th groups in the periodic table of chemical elements. Examples of these materials used in our products are gallium arsenide ("GaAs") and indium phosphide ("InP").

We provide semiconductor solutions for managing the movement of data in data center, telecom, enterprise and embedded networking applications. We provide a broad variety of RF semiconductor devices, wireless connectivity solutions and custom touch controllers for the wireless market. We also provide semiconductor solutions for enabling the set-top box and broadband access applications and for enabling secure movement of digital data to and from host machines, such as servers, personal computers and storage systems, to the underlying storage devices, such as hard disk drives and solid-state drives.

Our product portfolio ranges from discrete devices to complex sub-systems that include multiple device types and may also incorporate firmware for interfacing between analog and digital systems. In some cases, our products include mechanical hardware that interfaces with optoelectronic or capacitive sensors. We focus on markets that require high quality and the technology leadership and integrated performance characteristic of our products. The table below presents our material semiconductor product families and their major end markets and applications during fiscal year 2020.

Major End Markets	Major Applications	Material Product Families
Broadband	• Set-top Box ("STB") and Broadband Access	• STB SoCs
		• Cable, digital subscriber line ("DSL") and passive optical networking ("PON") central office/ consumer premise equipment ("CO/ CPE") SoCs
		• Wireless local area network ("WLAN") access point SoCs
Networking	• Data center, Telecom, Enterprise and Embedded Networking	• Ethernet switching and routing merchant silicon
		• Embedded processors and controllers
		• Serializer/Deserializer ("SerDes"), application specific integrated circuits ("ASICs")
		• Optical and copper, physical layer ("PHYs")
		• Fiber optic transmitter and receiver components
Wireless	• Mobile handsets	• RF front end modules ("FEMs"), filters, power amplifiers
		• Wi-Fi, Bluetooth, global positioning system/global navigation satellite system ("GPS/GNSS") SoCs
		• Custom touch controllers
Storage	• Servers and storage systems	• Serial attached small computer system interface ("SAS") and redundant array of independent disks ("RAID") controllers and adapters
		• Peripheral component interconnect express ("PCIe") switches
		• Fibre channel host bus adapters ("HBA")
	• Hard disk drives ("HDD"); Solid-state drives ("SSD")	• Read channel based SoCs; Custom flash controllers
		• Preamplifiers
Industrial	• Power isolation, power conversion and renewable energy systems	• Optocouplers
	• Factory automation, in-car infotainment and renewable energy systems	• Industrial fiber optics
	• Motor controls and factory automation	• Motion control encoders and subsystems
	• Displays and lighting	• Light emitting diode ("LEDs")

Set-Top Box Solutions: We offer complete SoC platform solutions for cable, satellite, Internet Protocol television, over-the-top and terrestrial STBs. Our products enable global service providers to introduce new and enhanced technologies and services in STBs, including transcoding, digital video recording functionality, higher definition video processing, increased networking capabilities, and more tuners to enable faster channel change and more simultaneous recordings. We are also enabling service providers in deploying High Efficiency Video Coding ("HEVC"), a video compression format that is a successor to the H.264/MPEG-4 format. HEVC enables ultra-high definition ("Ultra HD"), services by effectively doubling the capacity of existing networks to deploy new or existing content. Our families of STB solutions support the complete range of resolutions, from standard definition, to high definition, and Ultra HD.

Broadband Access Solutions: We offer complete SoC platform solutions for DSL, cable, PON and WLAN for both CPE and CO deployments. Our CPE devices are used in broadband modems, residential gateways and Wi-Fi access points and routers. Our CO devices, including DSL Access Multiplexer, cable modem termination systems and PON optical line termination medium access controller, are empowering modern operator broadband infrastructure. Our products enable global service providers to continue to deploy next generation broadband access technologies across multiple standards, including G.Fast, data over cable service interface specification, PON and Wi-Fi to provide more bandwidth and faster speeds to consumers.

Ethernet Switching & Routing: Ethernet is a ubiquitous interconnection technology that enables high performance and cost effective networking infrastructure. We offer a broad set of Ethernet switching and routing products that are optimized for data center, service provider network, enterprise network, and embedded network applications. In the data center market, our high capacity, low latency, switching silicon supports advanced protocols around virtualization and multi-pathing. Our Ethernet switching fabric technologies provide the ability to build highly scalable flat networks supporting tens of thousands of servers. Our service provider switch portfolio enables carrier/service provider networks to support a large number of services in the wireless backhaul, access, aggregation and core of their networks. For enterprise networks and embedded Ethernet applications, we offer product families that combine multi-layer switching capabilities and support lower power modes that comply with industry standards around energy efficient Ethernet.

Embedded Processors & Controllers: Our embedded processors leverage our ARM central processing unit and Ethernet switching technology to deliver SoCs for high performance embedded applications in a wide range of communication products such as voice-over-internet-protocol, telephony, point-of-sale devices and enterprise and retail access points and gateways. We offer a range of knowledge-based processors to enable high-performance decision-making for packet processing in a variety of advanced devices in the enterprise, metro, access, edge and core networking spaces. We also offer a range of Ethernet controllers for servers and storage systems supporting multiple generations of Ethernet technology.

SerDes ASICs: For data center and enterprise networking, and high performance computing applications, we supply high speed SerDes technology integrated into ASICs. These ASICs are custom products built to individual customers specifications. Our ASICs are designed on advanced CMOS process technologies, focused primarily on leading edge geometries.

Physical Layer Devices: These devices, also referred to as PHYs, are transceivers that enable the reception and transmission of Ethernet data packets over a physical medium such as copper wire or optical fibers. Our high performance Ethernet transceivers are built upon a proprietary digital signal processing communication architecture optimized for high-speed network connections and support the latest standards and advanced features, such as energy efficient Ethernet, data encryption and time synchronization. We also offer a range of automotive Ethernet products to meet growing consumer demand for in-vehicle connectivity.

Fiber Optic Components: We supply a wide array of optical components to the Ethernet networking, storage, and access, metro- and long-haul telecommunication markets. Our optical components enable the high speed reception and transmission of data through optical fibers.

RF Semiconductor Devices: Our RF semiconductor devices selectively filter, as well as amplify, RF signals. Filters enable modern wireless communication systems to support a large number of subscribers simultaneously by ensuring that the multiple transmissions and receptions of voice and data streams do not interfere with each other. We were among the first to deliver commercial film bulk acoustic resonator ("FBAR") filters that offer technological advantages over competing filter technologies, to allow mobile handsets to function more efficiently in today's congested RF spectrum. FBAR technology has a significant market share within the cellular handset market. Our RF products include FEMs that incorporate multiple die into multi-function RF devices, duplexers and multiplexers, which are a combination of two or more transmit and receive filters in a single device, using our proprietary FBAR technology, discrete filters and discrete power amplifiers.

Our expertise in FBAR technology, amplifier design, and module integration enables us to offer industry-leading performance in cellular RF transceiver applications. Our proprietary GaAs wafer manufacturing processes are critical to the production of power amplifier and low noise amplifier products.

Table of Contents

Connectivity Solutions: Our connectivity solutions include discrete and integrated Wi-Fi and Bluetooth solutions, and satellite-based GPS/GNSS mobile navigation receivers.

Wi-Fi allows devices on a local area network to communicate wirelessly, adding the convenience of mobility to the utility of high-speed data networks. We offer a family of high performance, low power Wi-Fi chipsets. Bluetooth is a low power technology that enables direct connectivity between devices. We offer a complete family of Bluetooth silicon and software solutions that enable manufacturers to easily and cost-effectively add Bluetooth functionality to virtually any device. These solutions include combination chips that offer integrated Wi-Fi and Bluetooth functionality, which provides significant performance advantages over discrete solutions.

We also offer a family of GPS, assisted-GPS and GNSS semiconductor products, software and data services. These products are part of a broader location platform that leverages a broad range of communications technologies, including Wi-Fi, Bluetooth and GPS, to provide more accurate location and navigation capabilities.

Custom Touch Controllers: Our touch controllers process signals from touch screens in mobile handsets and tablets.

SAS, RAID & PCIe Products: We provide SAS and RAID controller and adapter solutions to server and storage system original equipment manufacturers ("OEMs"). These solutions enable secure and high speed data transmission between a host computer, such as a server, and storage peripheral devices, such as HDD, SSD and optical disk drives and disk and tape-based storage systems. Some of these solutions are delivered as stand-alone semiconductors, typically as a controller. Other solutions are delivered as circuit boards, known as adapter products, which incorporate our semiconductors onto a circuit board with other features. RAID technology is a critical part of our server storage connectivity solutions as it provides protection against the loss of critical data resulting from HDD failures.

We also provide interconnect semiconductors that support the PCI and PCIe communication standards. PCIe is the primary interconnection mechanism inside computing systems today.

Fibre Channel Products: We provide Fibre Channel HBAs, which connect host computers such as servers to FC SANs.

HDD & SSD Products: We provide read channel-based SoCs and preamplifiers to HDD OEMs. These are the critical chips required to read, write and protect data. An HDD SoC is an integrated circuit that combines the functionality of a read channel, serial interface, memory and a hard disk controller in a small, high-performance, low-power and cost-effective package. Read channels convert analog signals that are generated by reading the stored data on the physical media into digital signals. In addition, we sell preamplifiers, which are used to amplify the initial signal to and from the drive disk heads so the signal can be processed by the read channel.

We also provide custom flash controllers to SSD OEMs. An SSD stores data in flash memory instead of on a hard disk, providing high speed access to the data. Flash controllers manage the underlying flash memory in SSDs, performing critical functions such as reading and writing data to and from the flash memory and performing error correction, wear leveling and bad block management.

Industrial End Markets: We also provide a broad variety of products for the general industrial and automotive markets. We offer optocouplers, which provide electrical insulation and signal isolation for signaling systems that are susceptible to electrical noise or interference. Optocouplers are used in a diverse set of applications, including industrial motors, automotive systems including those used in hybrid engines, power generation and distribution systems, switching power supplies, motion sensors, telecommunications equipment, computers and office equipment, plasma displays, and military electronics. We also provide industrial fiber optics, motion encoders and LED products.

Infrastructure Software

Our portfolio of mission critical software solutions enables customers to leverage the benefits of agility, automation, insights, resiliency and security in managing business processes and technology investments.

Broadcom mainframe software solutions, which consist of security and infrastructure management solutions, help enterprises embrace open tools and technologies, integrate their mainframe into their cloud infrastructures and speed software delivery with the next generation of cross-platform innovations. We combine advanced technology solutions with creative, value-add programs that help foster skills development, inform strategy and planning, and provide flexibility in licensing fees. This unique approach, rooted in a deep commitment to partnership with our customers, is designed to fuel our customers' productivity, boost operational efficiency, advance enterprise security, and support our customers' overall business success.

[Table of Contents](#)

BizOps software solutions enable large global organizations to transform into digital businesses by providing an end-to-end digital infrastructure management platform that delivers speed, agility and the ability to optimize for risk across multi-cloud hybrid environments and workloads. More specifically, these products offer unique solutions that help with application development, testing and deployment, and operations and automation. We are able to leverage our core strengths and development efforts to create products and enterprise software solutions that bring new innovation to our mainframe software solutions and vice versa, spanning three strategic portfolios: ValueOps, DevOps and AIOps.

Our Symantec cyber security software solutions span endpoint, network, information and identity security, helping customers secure identities and information stored wherever the data resides, including on mobile devices, in the cloud and on-premises. Through our Symantec Integrated Cyber Defense platform, we provide a unified approach that allows customers to protect, defend and respond to sophisticated attacks across endpoints, identities, and infrastructure, whether on-premises, in the cloud, or hybrid.

We also offer mission critical FC SAN products designed to help customers reduce the cost and complexity of managing business information within a shared data storage environment, enabling high levels of availability of mission critical applications in the form of modules, switches and subsystems incorporating multiple semiconductor products. We deliver reliable and simplified management of these FC SAN products through our software-based management tools designed to maximize uptime, dramatically simplify storage area networking deployment and management, and provide high levels of visibility and insight into the storage network.

The table below presents our software portfolios and their material offerings during fiscal year 2020.

Software Portfolio	Portfolio Description	
Mainframe Software	• Solutions for DevOps, AIOps and cyber security that accelerate enterprise innovation	• ma
		•
		• Ma
		• Te
		•
		•
		•
BizOps	• Connects business operations and technology functions	•
		•
		•
Symantec Cyber Security	• Comprehensive threat protection and compliance to secure users' identities and their information	•
		•
		•
		•
FC SAN Management	• Transforms current storage networks with autonomous SAN capabilities	•
Payment Authentication	• Software designed to reduce Card Not Present and prevent e-commerce fraud, while improving user experience.	•

Operational Analytics & Management*:* These solutions combine big data, machine learning and artificial intelligence (“AI”) with mainframe expertise to deliver meaningful and actionable insights to augment and automate day-to-day operations and deliver exceptional customer experiences.

Automation***:*** These solutions reduce manual effort by enabling customers to proactively optimize resources and orchestrate automation across enterprise applications and systems.

Databases & Database Management*:* These high-performance databases and management tools store, organize, and manage mainframe data to ensure optimal performance, efficient administration, and reliability of critical systems.

Application Development & Testing*:* These solutions enable customers to accelerate software delivery while increasing code quality through the use of our agile processes and tools, and DevOps solutions. Our open-first strategy helps customers modernize their mainframe environment through the use of open source and open application programming technologies across people, process, tooling and applications, resulting in greater synergy and alignment with their corporate IT.

Identity & Access Management*:* These solutions manage mainframe access and elevate it with modern practices such as multi-factor authentication, managing access for privileged users, and supporting all external security managers.

Compliance & Data Protection*:* These solutions locate and protect sensitive mainframe data to ensure compliance and identify risk, identify and proactively respond to potential risks and bad actors, and reduce risk and lighten security management load with automated identification and authorization cleanup.

Security Insights Platform*:* This solution helps ensure a trusted environment for customers and their employees by quickly interpreting and assessing mainframe security posture, identifying risks and developing remediation steps on an ongoing and ad hoc basis. This data is available for use with in-house tools for security information and event management.

ValueOps*:* This solution delivers capabilities that enable customers to optimize flow of value by aligning planned investments to scheduled development work and track deliverables from planning through execution, enabling improved development cycle times, reduced bottlenecks, and faster time to value.

DevOps: This solution offers capabilities that empower users of our agile processes and tools to track development progress and deploy releases confidently with assurance of feature completeness, high-quality and reduced risk. Key stakeholders have a single view of key insights into release progress, health, quality, and defect trends, and metrics that drive focus, gauge readiness, and help to ensure successful, quality releases.

AIOps: This solution combines application, infrastructure and network monitoring and correlation with intelligent recommendations and auto-remediation capabilities to help customers create more resilient production environments and improve customer experience.

Endpoint Security: Endpoints are the critical last line of defense against cyber attackers. Our Symantec endpoint security solutions prevent, detect and respond to emerging threats across all devices and operating systems including laptops, desktops, tablets, mobile phones, servers and cloud workloads through an intelligent AI driven security console and single agent.

Network Security: Email and web access are the lifeblood and essential communication means for every modern organization. We have a full array of network security solutions, as well as a shared set of advanced threat protection technologies to stop inbound and outbound threats targeting end users, information and key infrastructure.

Information Security: Information protection and compliance is critical to managing risk. We offer integrated information security solutions to help organizations protect users, applications and their most sensitive data everywhere it resides or moves - across endpoints, cloud services, private applications and on-premises.

Identity Security: User identities are under attack by cyber criminals hoping to exploit their access and privileges and do harm. We mitigate these attacks by enforcing granular security policies to stop unauthorized access to sensitive resources and data.

Fibre Channel Switch Products: Our Brocade Fibre Channel switch products provide interconnection, bandwidth and high-speed switching between servers and storage devices which are in a FC SAN. FC SANs are networks dedicated to mission critical storage traffic, and enable simultaneous high speed and secure connections among multiple host computers and multiple storage arrays.

Payment Security Suite: This is a software as a service ("SaaS")-based payment authentication service to help banks protect against fraud and ensure a hassle-free online shopping experience for their customers.

Research and Development

We are committed to continuous investment in product development and enhancement, with a focus on rapidly introducing new, proprietary products and releases. Many of our products have grown out of our own research and development efforts, and have given us competitive advantages in certain target markets due to performance differentiation. However, we opportunistically seek to enhance our capabilities through the acquisition of engineers with complementary research and development skills and complementary technologies and businesses. We focus our research and development efforts on the development of mission critical, innovative, sustainable and higher value product platforms and those that improve the quality and stability in our broadly deployed products. We leverage our design capabilities in markets where we believe our innovation and reputation will allow us to earn attractive margins by developing high value-add products.

We plan to continue investing in product development, both organically and through acquisitions, to drive growth in our business. We also invest in process development and improvements to product features and functions, as well as fabrication capabilities to optimize processes for devices that are manufactured internally. Our field application engineers, design engineers, and product and software development engineers are located in many places around the world, and in many cases near our top customers. This enhances our customer reach and our visibility into new product opportunities and, in the case of our semiconductor customers, enables us to support our customers in each stage of their product development cycle, from the early stages of production design to volume manufacturing and future growth. By collaborating with our customers, we have opportunities to develop high value-added, customized products for them that leverage our existing technologies. We anticipate that we will continue to make significant research and development expenditures in order to maintain our competitive position, and to ensure a continuous flow of innovative and sustainable product platforms.

Customers, Sales and Distribution

We sell our products through our direct sales force and a select network of distributors and channel partners globally. Distributors and OEMs, or their contract manufacturers, typically account for the substantial majority of our semiconductor sales. Historically, a relatively small number of customers have accounted for a significant portion of our net revenue. Sales to distributors accounted for 42% and 46% of our net revenue for fiscal years 2020 and 2019, respectively. We believe our aggregate sales to our top five end customers, through all channels, accounted for more than 30% of our net revenue for each of our fiscal years 2020 and 2019. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 15% and 20% of our net revenue for fiscal years 2020 and 2019, respectively. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

Many of our semiconductor customers design products in North America or Europe that are then manufactured in Asia. To serve customers around the world, we have strategically developed relationships with large global electronic component distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges. We also sell our products to a wide variety of OEMs or their contract manufacturers. We have established strong relationships with leading OEM customers across multiple target markets. Our direct sales force focuses on supporting our large OEM customers, and has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer’s organization. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers. Many of our major customer relationships have been in place for many years and are often the result of years of collaborative product development. This has enabled us to build our extensive IP portfolio and develop critical expertise regarding our customers’ requirements, including substantial system-level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. Many of our customers and their contract manufacturers often require time critical delivery of our products to multiple locations around the world. With sales offices located in various countries, our primary warehouse in Malaysia, and dedicated regional customer support call centers, where we address customer issues and handle logistics and other order fulfillment requirements, we believe we are well-positioned to support our customers throughout the design, technology transfer and manufacturing stages across all geographies.

Our software customers are in most major industries worldwide, including banks, insurance companies, other financial services providers, government agencies, global information technology (“IT”) service providers, telecommunication providers, transportation companies, manufacturers, technology companies, retailers, educational organizations and health care institutions. Our traditional software customers generally consist of large enterprises that have computing environments from multiple vendors and are highly complex. We remain focused on strengthening relationships and increasing penetration within our existing core, mainframe-centric and Symantec endpoint customers and expanding the adoption of our enterprise software offerings with these customers. We believe our enterprise-wide license model will continue to offer our customers reduced complexity, more flexibility and an easier renewal process that will help drive revenue growth.

Manufacturing Operations

We focus on maintaining an efficient global supply chain and a variable, low-cost operating model. Accordingly, we outsource a majority of our manufacturing operations, utilizing third-party foundry and assembly and test capabilities, as well as some of our corporate infrastructure functions. The majority of our front-end wafer manufacturing operations is outsourced to external foundries, including Taiwan Semiconductor Manufacturing Company Limited ("TSMC"). We use third-party contract manufacturers for a significant majority of our assembly and test operations, including Advanced Semiconductor Engineering, Inc., Foxconn Technology Group, Amkor Technology, Inc. and Siliconware Precision Industries Co., Ltd. We use our internal fabrication facilities for products utilizing our innovative and proprietary processes, to protect our IP and to accelerate time to market for our products, while outsourcing commodity processes such as standard CMOS. Examples of internally fabricated semiconductors include our FBAR filters for wireless communications and our vertical-cavity surface emitting laser and side emitting lasers-based on GaAs and InP lasers for fiber optic communications. The majority of our internal III-V semiconductor wafer fabrication is done in the U.S. and Singapore. Many of our products are designed to be manufactured in a specific process, typically at one particular foundry, either our own or with a particular contract manufacturer, and in some instances, we may only qualify one contract manufacturer to manufacture certain of our products.

We also have a long history of operating in Asia, where approximately 35% of our employees are located and where we manufacture and source the majority of our products and materials. We store the majority of our product inventory in our warehouse in Malaysia and our presence in Asia places us in close proximity to many of our customers' manufacturing facilities and at the center of worldwide electronics manufacturing.

Manufacturing Materials and Suppliers

Our manufacturing operations employ a wide variety of semiconductors, electromechanical components and assemblies and raw materials. We purchase materials from hundreds of suppliers on a global basis. These supply relationships are generally conducted on a purchase order basis. While we have not experienced any significant difficulty in obtaining the materials used in the conduct of our business and we believe that no single supplier is material, some of the parts are not readily available from alternate suppliers due to their unique design or the length of time necessary for re-design or qualification. Our long-term relationships with our suppliers allow us to proactively manage our technology development and product discontinuance plans, and to monitor our suppliers' financial health. Some suppliers may, nonetheless, extend their lead times, limit supplies, increase prices or cease to produce necessary parts for our products. If these are unique or highly specialized components, we may not be able to find a substitute quickly, or at all. To address the potential disruption in our supply chain, we may use a number of techniques, including, in some cases, qualifying more than one source of supply, redesigning products for alternative components and incremental, or in some cases, "lifetime" purchases of affected parts for supply buffer.

Competition

The markets in which we participate are highly competitive. Our competitors range from large, international companies offering a wide range of products to smaller companies specializing in narrow markets. The competitive landscape is changing as a result of a trend toward consolidation within many industries, as some of our competitors have merged with or been acquired by other competitors, while others have begun collaborating with each other. We expect this consolidation trend to continue. We expect competition in the markets in which we participate to continue to increase as existing competitors improve or expand their product offerings and as new companies enter the market. Additionally, our ability to compete effectively depends on a number of factors, including: quality, technical performance, price, product features, product system compatibility, system-level design capability, engineering expertise, responsiveness to customers, new product innovation, product availability, delivery timing and reliability, and customer sales and technical support.

In the semiconductor market, we compete with integrated device manufacturers, fabless semiconductor companies, as well as the internal resources of large, integrated OEMs. Our primary competitors are Analog Devices, Inc., Cisco Systems, Inc., Cree, Inc., Finisar Corp., GlobalFoundries, Hamamatsu Photonics K.K., Heidenhain Corporation, HiSilicon Technologies Co. Ltd., Intel Corp., Lumentum Operations LLC, MACOM Technology Solutions Holdings, Inc., Marvell Technology Group, Ltd., Mediatek Inc., Mellanox Technologies, Inc., Microsemi Corp., Mitsubishi Electric Corporation, Murata Manufacturing Co., Ltd., NXP Semiconductors N.V., Qorvo, Inc., Qualcomm Inc., Quantenna Communications, Inc. (acquired by ON Semiconductor Corporation), ST Microelectronics N.V., Renesas Electronics Corporation, Skyworks Solutions, Inc., Sumitomo Corporation, TDK-EPC Corporation, Toshiba Corporation, and Texas Instruments, Inc. We compete based on the strength and expertise of our high speed proprietary design expertise, FBAR technology, amplifier design, module integration, proprietary materials processes, multiple storage protocols and mixed-signal design, our broad product portfolio, support of key industry standards, reputation for quality products, and our customer relationships.

In the infrastructure software market, we compete with large vendors of hardware and operating system software and cloud service providers, who continue to both expand their product and service offerings, and consolidate offerings into broad product lines. Our primary competitors are AppDynamics, Inc. (acquired by Cisco), Atlassian Corporation, Plc, BMC Software

Inc., BeyondTrust, Cisco Systems, Inc., Compuware Corporation, CrowdStrike Holdings, Inc., CyberArk Software, Ltd., International Business Machines Corporation, Micro Focus International Plc, Microsoft Corporation, MuleSoft, Inc. (acquired by Salesforce.com, Inc.), New Relic, Inc., Oracle Corporation, Proofpoint, Inc., SailPoint, Inc., ServiceNow, Inc., SolarWinds, Inc., Splunk, Inc., VMware, Inc. and Zscaler, Inc. We compete based on our breadth of portfolio of enterprise management tools, breadth and synergy of offerings, our platform and hardware independence, our global reach, and our deep customer relationships and industry experience.

Intellectual Property

Our success depends in part upon our ability to protect our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks, service marks, trade secrets and similar IP, as well as customary contractual protections with our customers, suppliers, employees and consultants, and through security measures to protect our trade secrets. We believe our current product expertise, key engineering talent and IP portfolio provide us with a strong platform from which to develop application specific products in key target markets.

As of November 1, 2020, we had 22,774 U.S. and other patents and 1,018 U.S. and other pending patent applications. The expiration dates of our patents range from 2020 to 2039, with a small number of patents expiring in the near future, none of which are expected to be material to our IP portfolio. We are not substantially dependent on any single patent or group of related patents.

We focus our patent application program to a greater extent on those inventions and improvements that we believe are likely to be incorporated into our products, as contrasted with more basic research. However, we do not know how many of our pending patent applications will result in the issuance of patents or the extent to which the examination process could require us to narrow our claims.

We and our predecessors have also entered into a variety of IP licensing and cross-licensing arrangements that have both benefited our business and enabled some of our competitors. A portion of our revenue comes from IP licensing royalty payments and from litigation settlements relating to such IP. We also license third-party technologies that are incorporated into some elements of our design activities, products and manufacturing processes. Historically, licenses of the third-party technologies used by us have generally been available to us on acceptable terms.

The industries in which we compete are characterized by the existence of a large number of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including by patent holding companies that do not make or sell products. Many of our customer agreements require us to indemnify our customers for third-party IP infringement claims arising from our products. Claims of this sort could harm our relationships with our customers and might deter future customers from doing business with us. With respect to any IP rights claims against us or our customers or distributors, we may be required to defend ourselves or our customers or distributors in litigation, cease manufacture the infringing products, pay damages, expend resources to develop non-infringing technology, seek a license which may not be available on commercially reasonable terms or at all, or relinquish patents or other IP rights.

With respect to our infrastructure software, the source code for our products is protected both as a trade secret and as copyrighted work. Except with respect to software components that are subject to open source licenses, our customers do not generally have access to the source code for our products. Rather, on-premise customers typically access only the executable code for our products, and SaaS customers access only the functionality of our SaaS offerings. Under certain contingent circumstances, some of our customers are beneficiaries of a source code escrow arrangement that enables them to obtain a limited right to access our source code.

Employees

Our future success depends on our ability to retain, attract and motivate qualified personnel. As the source of our technological and product innovations, our engineering and technical personnel are a significant asset. Competition for these employees is significant in many areas of the world in which we operate, particularly in Silicon Valley and Southeast Asia where qualified engineers are in high demand. We track and report internally on key talent metrics including the portion of our workforce in research and development and the voluntary attrition rate. During fiscal year 2020, our voluntary attrition rate was 7%, below the technology industry benchmark (AON, 2020 Salary Increase and Turnover Study — Second Edition, September 2020).

As of November 1, 2020, we had approximately 21,000 employees worldwide, with approximately 63% of them in research and development. By geography, approximately 53% of our employees are located in North America, 35% in Asia, and 12% in Europe, the Middle East and Africa and a significant majority of our research and development personnel are located in Czech Republic, India, Israel, Singapore and the U.S.

Governmental Regulation

Our semiconductor manufacturing operations and research and development involve the use of hazardous substances and are regulated under international, federal, state and local laws governing health, safety and the environment. These regulations include limitations on discharge of pollutants to air, water, and soil; remediation requirements; product chemical content limitations; manufacturing chemical use and handling restrictions; pollution control requirements; waste minimization considerations; and treatment, transport, storage and disposal of solid and hazardous wastes. We are also subject to regulation by the U.S. Occupational Safety and Health Administration and similar health and safety laws in other jurisdictions.

We believe that our properties and operations at our facilities comply in all material respects with applicable environmental laws and worker health and safety laws. However, the risk of environmental liabilities cannot be completely eliminated and there can be no assurance that the application of environmental, health and safety laws to our business will not require us to incur significant expenditures.

We are also regulated under a number of international, federal, state and local laws regarding recycling, product packaging and product content requirements, including legislation enacted in the U.S., European Union and China, among a growing number of jurisdictions, which have placed greater restrictions on the use of lead, among other chemicals, in electronic products, which affects materials composition and semiconductor packaging. In addition, our business is subject to various import/export regulations, such as the U.S. Export Administration Regulations, and applicable executive orders, and rules of industrial standards bodies, like the International Standards Organization, as well as regulation by other agencies, such as the U.S. Federal Trade Commission ("FTC"). These laws, regulations and orders are complex, may change frequently and with limited notice, have generally become more stringent over time, and have intensified under the current U.S. administration, especially in light of ongoing trade tensions with China. We may incur significant expenditures in future periods as a result.

Backlog

Our semiconductor sales are generally made pursuant to short-term purchase orders. These purchase orders are made without deposits and may be rescheduled, cancelled or modified on relatively short notice, without substantial penalty. In addition, our software contracting model for the majority of our customers, which are for enterprise-wide licenses, provide for termination thereof by our customers at any time for any reason. As a result, we recognize revenue from these contracts ratably over time. Therefore, although we may have a large backlog from time to time, we believe that purchase orders or backlog are not necessarily a reliable indicator of future sales.

Seasonality

Historically, our net revenue has typically been higher in the second half of the fiscal year than in the first half, primarily due to seasonality in our wireless communications products. These products have historically experienced seasonality due to launches of new mobile handsets manufactured by our OEM customers. However, from time to time, typical seasonality and industry cyclicality are overshadowed by other factors such as wider macroeconomic effects, the timing of significant product transitions and launches by large OEMs, particularly with our wireless communications products. We have a diversified business portfolio and we believe that our overall revenue is less susceptible to seasonal variations as a result of this diversification.

Other Information

Our website is www.broadcom.com. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and other reports (and amendments thereto) filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 with the Securities and Exchange Commission (the "SEC"), as well as proxy statements filed by Broadcom, free of charge at the "Investor Center - SEC Filings" section of our website at www.broadcom.com, as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Such periodic reports, proxy statements and other information are also available at the SEC's website at http://www.sec.gov. The reference to our website address does not constitute incorporation by reference of the information contained on or accessible through our website.

ITEM 1A. RISK FACTORS

Our business, operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock and preferred stock. Many of the following risks and uncertainties are, and will be, exacerbated by the COVID-19 pandemic and any worsening of the global business and economic environment as a result. The following material factors, among others, could cause our actual results to differ materially from historical results and those expressed in forward-looking statements made by us or on our behalf in filings with the SEC, press releases, communications with investors and oral statements.

Risk Factors Summary

The following is a summary of the principal risks that could adversely affect our business, operations and financial results.

Risks Related to Our Business

- The ongoing COVID-19 pandemic has, and will likely continue to, negatively impact the global economy and disrupt normal business activity.
- The majority of our sales come from a small number of customers and a reduction in demand or loss of one or more of our significant customers may adversely affect our business.
- Dependence on contract manufacturing and suppliers of critical components within our supply chain may adversely affect our ability to bring products to market.
- We purchase a significant amount of the materials used in our products from a limited number of suppliers.
- Adverse global economic conditions could have a negative effect on us.
- Global political and economic conditions and other factors related to our international operations could adversely affect us.
- Our business is subject to various governmental regulations and trade restrictions. Compliance with these regulations may cause us to incur significant expense and, if we fail to maintain compliance, we may be forced to cease manufacture and distribution of certain products or subjected to civil or criminal penalties.
- We are subject to risks associated with our distributors and other channel partners, including product inventory levels and product sell-through.
- Our dependence on senior management and if we are unable to attract and retain qualified personnel, we may not be able to execute our business strategy effectively.
- We may pursue acquisitions, investments, joint ventures and dispositions, which could adversely affect our results of operations.
- We may be involved in legal proceedings, including IP, anti-competition and securities litigation, employee-related claims and regulatory investigations.
- Our operating results are subject to substantial quarterly and annual fluctuations.
- Failure to adjust our manufacturing and supply chain to accurately meet customer demand could adversely affect our results of operations.
- We operate in the highly cyclical semiconductor industry, which is subject to significant downturns.
- Winning business in the semiconductor solutions industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.
- Competition in our industries could prevent us from growing our revenue.

- A prolonged disruption of our manufacturing facilities, research and development facilities, warehouses or other significant operations, or those of our suppliers, could have a material adverse effect on us.
- We may be unable to maintain appropriate manufacturing capacity or product yields at our own manufacturing facilities.
- Any failure of our IT systems or one or more of our corporate infrastructure vendors to provide necessary services could have a material adverse effect on our business.
- Our ability to maintain or improve gross margin.
- Our ability to protect the significant amount of IP in our business.
- Incompatibility of our software products with operating environments, platforms, or third-party products, demand for our products and services could decrease.
- Failure to enter into software license agreements on a satisfactory basis could adversely affect us.

- Licensed third party software used in our products may not be available to us in the future, which may delay product development and production or cause us to incur additional expense.
- Use of open source code sources, which, under certain circumstances could materially adversely affect us.
- We are subject to warranty claims, product recalls and product liability.
- The complexity of our products could result in unforeseen delays or expense or undetected defects or bugs.
- We make substantial investments in research and development and unsuccessful investments could materially adversely affect our business, financial condition and results of operations.
- We collect, use, store, or otherwise process personal information, which subjects us to privacy and data security laws and contractual commitments, and our actual or perceived failure to comply with such laws and commitments could harm our business.
- We are subject to environmental, health and safety laws, which could increase our costs, restrict our operations and require expenditures.
- Social and environmental responsibility regulations, policies and provisions, as well as customer demand, may make our supply chain more complex and may adversely affect our relationships with customers.
- The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future.
- A breach of our security systems may have a material adverse effect on our business.
- Fluctuations in foreign exchange rates could result in losses.

Risks Relating to Taxes

- Changes in tax legislation or policies could materially impact our financial position and results of operations.
- Our corporate income taxes could significantly increase if we are unable to maintain our tax concessions or if our assumptions and interpretations regarding tax laws and concessions prove to be incorrect.
- Our benefit from income taxes and overall cash tax costs are affected by a number of factors that could materially, adversely affect financial results.

Risks Relating to Our Indebtedness

- Our substantial indebtedness could adversely affect our financial health and our ability to execute our business strategy.
- The instruments governing our indebtedness impose certain restrictions on our business.
- Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flows from our business to pay our substantial debt.

Risks Relating to Owning Our Common Stock

- Volatility of our stock price could result in substantial losses for our investors as well as class action litigation against us and our management.
- A substantial amount of our stock is held by a small number of large investors.
- There can be no assurance that we will continue to declare cash dividends.

For a more complete discussion of the material risks facing our business, see below.

Risks Related to Our Business

The ongoing COVID-19 pandemic has, and will likely continue to, negatively impact the global economy and disrupt normal business activity, which may have an adverse effect on our results of operations.

The global spread of COVID-19 and the efforts to control it have slowed global economic activity and disrupted, and reduced the efficiency of, normal business activities in much of the world. The pandemic has resulted in authorities around the world implementing numerous unprecedented measures such as travel restrictions, quarantines, shelter in place orders, and factory and office shutdowns. These measures have impacted, and will likely continue to impact our workforce and operations, and those of our customers, contract manufacturers (“CMs”), suppliers and logistics providers, particularly in the event of a significant global resurgence of the illness.

We have been, and expect to continue, experiencing some disruption to parts of our global semiconductor supply chain, with suppliers increasing lead times or placing products on allocation, including procuring necessary components and inputs, such as wafers and substrates, in a timely fashion. In addition, our primary warehouse and a number of our key suppliers, particularly assembly and test service providers, are in Malaysia. While our Malaysia warehouse has remained fully operational, many of the facilities of our key suppliers and other service providers were shut down or operated at reduced capacity for extended periods. This resulted in significant logistical challenges and product delays, which could recur in the event of any future closures of, or periods of reduced operations at, our warehouse or the facilities of our suppliers and providers. Any similar disruption at our Fort Collins, Colorado manufacturing facility would severely impact our ability to manufacture our FBAR products and adversely affect our wireless business. In addition, disruptions to commercial transportation infrastructure have increased delivery times for materials and components to our facilities, transfers of our products to our key suppliers and, in some cases, our ability to timely ship our products to customers. As a result of these supply chain disruptions, we have increased customer order lead times and placed some products on allocation. We are also largely building semiconductor products to order, instead of based on customer forecasts, in light of the ongoing uncertainty. This may limit our ability to fulfill orders and we may be unable to satisfy all of the demand for our products, which may adversely affect our relationships with our customers.

In response to governmental directives and recommended safety measures, we modified our workplace practices globally, which has resulted in many of our employees working remotely for extended periods of time. While we have implemented a phased-in return of employees to many of our facilities, if the spread of COVID-19 worsens significantly, we may need to further limit onsite operations or otherwise modify our business practices in a manner that may adversely impact our business. Working remotely for extended periods may reduce our employees' efficiency and productivity, which may cause product development delays, hamper new product innovation and have other unforeseen adverse effects on our business. In addition, if a significant number of our employees, or employees and third parties performing key functions, including our CEO and members of our board of directors, become ill, our business may be further adversely impacted. While we have implemented personal safety measures at all of our facilities where our employees are working onsite, any actions we take may not be sufficient to mitigate the risk of infection and could result in a significant number of COVID-19-related claims. Changes to state workers' compensation laws, as have recently occurred in California, may increase our potential liability for such claims.

In the longer-term, the COVID-19 pandemic is likely to adversely affect the economies and financial markets of many countries, and could result in a global economic downturn and a recession. This would likely adversely affect demand for our products and those of our customers, particularly consumer products such as smartphones, which may, in turn negatively impact our results of operations. However, there is a significant degree of uncertainty and lack of visibility as to the extent and duration of any such downturn or recession. While we continue to see robust demand in our semiconductor segment, and have seen little impact to our software business from the COVID-19 pandemic, the environment remains uncertain and it may not be sustainable over the longer term. The degree to which the pandemic ultimately impacts our business and results of operations will depend on future developments beyond our control, including the severity of the pandemic, the extent of actions to contain the virus, availability of a vaccine or other treatment, how quickly and to what extent normal economic and operating conditions can resume, and the severity and duration of the global economic downturn that results from the pandemic.

The majority of our sales come from a small number of customers and a reduction in demand or loss of one or more of our significant customers may adversely affect our business.

We are dependent on a small number of end customers, OEMs, their respective CMs, and certain distributors for a majority of our business, revenue and results of operations. For fiscal year 2020, sales to distributors accounted for 42% of our net revenue. We believe aggregate sales, through all channels, to Apple and our top five end customers, accounted for approximately 15% and more than 30% of our net revenue for fiscal year 2020, respectively. This customer concentration increases the risk of quarterly fluctuations in our operating results and our sensitivity to any material, adverse developments experienced by our significant customers.

The terms and conditions under which we do business with most of our semiconductor customers generally do not include commitments by those customers to purchase any specific quantities of products from us. Even in those instances where we enter into an arrangement under which a customer agrees to source an agreed portion of its product needs from us (provided that we are able to meet specified development, supply and quality commitments), the arrangement often includes pricing schedules or methodologies that apply regardless of the volume of products purchased, and those customers may not purchase the amount of product we expect. As a result, we may not generate the amount of revenue or the level of profitability we expect under such arrangements. Moreover, our top customers' purchasing power has, in some cases, given them the ability to make greater demands on us with regard to pricing and contractual terms in general. We expect this trend to continue, which may adversely affect our gross margin on certain products and, should we fail to perform under these arrangements, we could also be liable for significant monetary damages.

The loss of, or any substantial reduction in sales to, any of our major customers could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Dependence on contract manufacturing and suppliers of critical components within our supply chain may adversely affect our ability to bring products to market, damage our reputation and adversely affect our results of operations.

We operate a primarily outsourced manufacturing business model that principally utilizes CMs, such as third-party wafer foundries and module assembly and test capabilities. Our semiconductor products require wafer manufacturers with state-of-the-art fabrication equipment and techniques, and most of our products are designed to be manufactured in a specific process, typically at one particular fab or foundry, either our own or with a particular CM.

We depend on our CMs to allocate sufficient manufacturing capacity to meet our needs, to produce products of acceptable quality at acceptable yields, and to deliver those products to us on a timely basis. We do not generally have long-term capacity commitments with our CMs and substantially all of our manufacturing services are on a purchase order basis with no obligation to provide us with any specified minimum quantities of product. Further, from time to time, our CMs will cease to, or will become unable to, manufacture a component for us. As the lead time needed to identify, qualify and establish reliable production at acceptable yields, with a new CM is typically lengthy, there is often no readily available alternative source and there may be other constraints on our ability to change CMs. In addition, qualifying such CMs is often expensive, and they may not produce products as cost-effectively as our current suppliers. In any such circumstances, we may be unable to meet our customer demand and may fail to meet our contractual obligations. This could result in the payment of significant damages by us to our customers, and our net revenue could decline, adversely affecting our business, financial condition and results of operations.

We utilize TSMC to produce the substantial majority of our semiconductor wafers. TSMC manufactured approximately 87% of the wafers manufactured by our CMs during fiscal year 2020. Our wafer requirements represent a significant portion of the total production capacity of TSMC. However, TSMC also fabricates wafers for other companies, including certain of our competitors, and could choose to prioritize capacity for other customers or reduce or eliminate deliveries to us on short notice, or raise their prices to us, all of which could harm our business, results of operations and gross margin. For example, Huawei Technologies Co. Ltd. ("Huawei"), as well as many of its suppliers, have significantly increased their wafer orders from TSMC due to certain U.S. export restrictions on sales to Huawei. This has caused, and may continue to cause, some dislocations in the semiconductor supply chain which may result in reduced or untimely wafer deliveries to us.

Any substantial disruption in TSMC's supply of wafers to us, or in the other contract manufacturing services that we utilize, as a result of a natural disaster, political unrest, military conflict, geopolitical turmoil, trade tensions, medical epidemics, such as the COVID-19 pandemic, climate change, economic instability, equipment failure or other cause, could materially harm our business, customer relationships and results of operations.

We also depend on our CMs to timely develop new, advanced manufacturing processes, including, in the case of wafer fabrication, transitions to smaller geometry process technologies. If these new processes are not timely developed or we do not have sufficient access to them, we may be unable to maintain or increase our manufacturing efficiency to the same extent as our competitors or to deliver products to our customers, which could result in loss of revenue opportunities and damage our relationships with our customers.

We purchase a significant amount of the materials used in our products from a limited number of suppliers.

Our manufacturing processes and those of our CMs rely on many materials, including silicon, GaAs and InP wafers, copper lead frames, precious and rare earth metals, mold compound, ceramic packages and various chemicals and gases. We purchase a significant portion of our materials, components and finished goods used in our products from a few materials providers, some of which are single source suppliers. As certain materials are highly specialized, the lead time needed to identify and qualify a new supplier is typically lengthy and there is often no readily available alternative source. During fiscal year 2020, we purchased approximately two-thirds of the materials for our manufacturing processes from six materials providers. We do not generally have long-term contracts with our materials providers and substantially all of our purchases are on a purchase order basis. Suppliers may extend lead times, limit supplies, place products on allocation or increase prices due to commodity price increases, capacity constraints or other factors and could lead to interruption of supply or increased demand in the industry. For example, due to the COVID-19 pandemic, we have experienced some supply constraints, including with respect to wafers and substrates. Additionally, the supply of these materials may be negatively impacted by increased trade tensions between the U.S. and its trading partners, particularly China. In the event that we cannot timely obtain sufficient quantities of materials or at reasonable prices, the quality of the material deteriorates or we are not able to pass on higher materials or energy costs to our customers, our business, financial condition and results of operations could be adversely impacted.

Adverse global economic conditions could have a negative effect on our business, results of operations and financial condition and liquidity.

A general slowdown in the global economy or in a particular region or industry, an increase in trade tensions with U.S. trading partners or a tightening of the credit markets could negatively impact our business, financial condition and liquidity. Adverse global economic conditions have from time to time caused or exacerbated significant slowdowns in the industries and markets in which we operate, which have adversely affected our business and results of operations. In recent periods, investor and customer concerns about the global economic outlook, which have significantly increased as a result of the COVID-19 pandemic, have adversely affected market and business conditions in general. Macroeconomic weakness and uncertainty also make it more difficult for us to accurately forecast revenue, gross margin and expenses, and may make it more difficult to raise or refinance debt. An escalation of trade tensions between the U.S. and China has resulted in trade restrictions and increased tariffs that harm our ability to participate in Chinese markets or compete effectively with Chinese companies. Sustained uncertainty about, or worsening of, current global economic conditions and further escalation of trade tensions between the U.S. and its trading partners, especially China and possible decoupling of the U.S. and China economies, could result in a global economic slowdown and long-term changes to global trade. Such events may also (i) cause our customers and consumers to reduce, delay or forgo technology spending, (ii) result in customers sourcing products from other suppliers not subject to such restrictions or tariffs, (iii) lead to the insolvency or consolidation of key suppliers and customers, and (iv) intensify pricing pressures. Any or all of these factors could negatively affect demand for our products and our business, financial condition and results of operations.

Global political and economic conditions and other factors related to our international operations could adversely affect our business, financial condition and results of operations.

A majority of our products are produced, sourced and sold internationally and our international revenue represents a significant percentage of our overall revenue. In addition, as of November 1, 2020, approximately 49% of our employees were located outside the U.S. Multiple factors relating to our international operations and to particular countries in which we operate could have a material adverse effect on our business, financial condition and results of operations. These factors include:

- changes in political, regulatory, legal or economic conditions or geopolitical turmoil, including terrorism, war or political or military coups, or civil disturbances or political instability foreign and domestic;
- restrictive governmental actions, such as restrictions on the transfer or repatriation of funds and foreign investments, data privacy regulations and trade protection measures, including increasing protectionism, import/export restrictions, import/export duties and quotas, trade sanctions and customs duties and tariffs, all of which have increased under the current U.S. administration;
- difficulty in obtaining product distribution and support, and transportation delays;
- potential inability to localize software products for a significant number of international markets;
- difficulty in conducting due diligence with respect to business partners in certain international markets;
- public health or safety concerns, medical epidemics or pandemics, such as COVID-19, and other natural- or man-made disasters;
- nationalization of businesses and expropriation of assets; and
- changes in U.S. and foreign tax laws.

A significant legal risk associated with conducting business internationally is compliance with the various and differing laws and regulations of the many countries in which we do business. In addition, the laws in various countries are constantly evolving and may, in some cases, conflict with each other. Although our policies prohibit us, our employees and our agents from engaging in unethical business practices, there can be no assurance that all of our employees, distributors or other agents will refrain from acting in violation of our related anti-corruption or other policies and procedures. Any such violation could have a material adverse effect on our business.

Our business is subject to various governmental regulations, and compliance with these regulations may cause us to incur significant expense. If we fail to maintain compliance with applicable regulations, we may be forced to cease the manufacture and distribution of certain products, and we could be subject to civil or criminal penalties.

Our business is subject to various international laws and other legal requirements, including packaging, product content, labor and import/export regulations, such as the U.S. Export Administration Regulations, and applicable executive orders. These laws, regulations and orders are complex, may change frequently and with limited notice, have generally become more stringent over time and have intensified under the current U.S. administration, especially in light of ongoing trade tensions with China. We may be required to incur significant expense to comply with, or to remedy violations of, these regulations. In addition, if our customers fail to comply with these regulations, we may be required to suspend sales to these customers, which could damage our reputation and negatively impact our results of operations. For example, Huawei, one of our customers, is subject to certain U.S. export restrictions, which has required us to suspend sales to Huawei until we obtain licenses from the U.S. Department of Commerce, which we may be unable to do so in a timely manner or at all. The U.S. government may also add additional Chinese companies to its restricted entity list and/or technologies to its list of prohibited exports to China, all of which have and will adversely affect our ability to sell our products and our revenue. These restrictive governmental actions and any similar measures that may be imposed on U.S. companies by the Chinese or other governments will likely limit or prevent us from doing business with certain of our customers or suppliers and harm our ability to compete effectively or otherwise negatively affect our ability to sell our products, and adversely affect our business and results of operations.

In addition, the manufacture and distribution of our semiconductors must comply with various laws and adapt to changes in regulatory requirements as they occur. For example, if a country in which our products are manufactured or sold sets technical standards that are not widely shared, it may require us to stop distributing our products commercially until they comply with such new standards, lead certain of our customers to suspend imports of their products into that country, require manufacturers in that country to manufacture products with different technical standards and disrupt cross-border manufacturing relationships, any of which could have a material adverse effect on our business, financial condition and results of operations. If we fail to comply with these requirements, we could also be required to pay civil penalties or face criminal prosecution.

Our products and operations are also subject to the rules of industrial standards bodies, like the International Standards Organization, as well as regulation by other agencies, such as the FTC. If we fail to adequately address any of these rules or regulations, our business could be harmed.

We are subject to risks associated with our distributors and other channel partners, including product inventory levels and product sell-through.

We sell our products through a direct sales force and a select network of distributors and other channel partners globally. Sales to distributors accounted for 42% of our net revenue in the fiscal year ended November 1, 2020 and are subject to a number of risks, including:

- fluctuations in demand based on our distributors’ product inventory levels and end customer demand in a given quarter;
- our distributors and other channel partners are generally not subject to minimum sales requirements or any obligation to market our products to their customers;
- our distributors and other channel partners agreements are generally nonexclusive and may be terminated at any time without cause;
- our lack of control over the timing of delivery of our products to end customers; and
- our distributors and other channel partners may market and distribute competing products and may place greater emphasis on the sale of these products.

In addition, we are selling our semiconductor products through an increasingly limited number of distributors, which exposes us to additional customer concentration and related credit risks.

We do not always have a direct relationship with the end customers of our products. As a result, our semiconductor products may be used in applications for which they were not necessarily designed or tested, including, for example, medical devices, and they may not perform as anticipated in such applications. In such event, failure of even a small number of parts could result in significant liabilities to us, damage our reputation and harm our business and results of operations.

Our business would be adversely affected by the departure of existing members of our senior management team.

Our success depends, in large part, on the continued contributions of our senior management team, and in particular, the services of Mr. Hock E. Tan, our President and Chief Executive Officer. Effective succession planning is also important for our long-term success. Failure to ensure effective transfers of knowledge and smooth transitions involving senior management could hinder our strategic planning and execution. None of our senior management is bound by written employment contracts. In addition, we do not currently maintain key person life insurance covering our senior management. The loss of any of our senior management could harm our ability to implement our business strategy and respond to the rapidly changing market conditions in which we operate.

If we are unable to attract and retain qualified personnel, especially our engineering and technical personnel, we may not be able to execute our business strategy effectively.

Our future success depends on our ability to retain, attract and motivate qualified personnel. We also seek to acquire talented engineering and technical personnel (including cyber security experts), as well as effective sales professionals, through acquisitions we may make from time to time or otherwise. As the source of our technological and product innovations, our engineering and technical personnel are a significant asset. Competition for these employees is significant in many areas of the world in which we operate, particularly in Silicon Valley and Southeast Asia where qualified engineers are in high demand. In addition, current or future immigration laws may make it more difficult to hire or retain qualified engineers, further limiting the pool of available talent. Further, our employees may decide not to continue working for us and may leave with little or no notice. We grant equity awards to the substantial majority of our employees and we believe these awards provide a powerful long-term retention incentive to our employees; however, we may be incorrect in this assumption, particularly if there is a material and persistent decline in the price of our common stock. In addition, we may be unable to obtain required stockholder approvals of future equity compensation plans needed to continue with our current equity granting philosophy. As a result, we may be limited in our ability to grant equity-based incentives, which may impair our efforts to attract and retain necessary personnel. Any inability to retain, attract or motivate such personnel could have a material adverse effect on our business, financial condition and results of operations.

We may pursue acquisitions, investments, joint ventures and dispositions, which could adversely affect our results of operations.

Our growth strategy includes acquiring or investing in businesses that offer complementary products, services and technologies, or enhance our market coverage or technological capabilities.

Any acquisitions we may undertake and their integration involve risks and uncertainties, such as:

- unexpected delays, challenges and related expenses, and disruption of our business;
- diversion of management’s attention from daily operations and the pursuit of other opportunities;
- incurring significant restructuring charges and amortization expense, assuming liabilities (some of which may be unexpected) and ongoing or new lawsuits related to the transaction or otherwise, potential impairment of acquired goodwill and other intangible assets, and increasing our expenses and working capital requirements;
- the potential for deficiencies in internal controls at the acquired business, as well as implementing our own management information systems, operating systems and internal controls for the acquired operations;
- our due diligence process may fail to identify significant issues with the acquired company’s products, financial disclosures, accounting practices, legal, tax and other contingencies, compliance with local laws and regulations (and interpretations thereof) in the U.S. and multiple international jurisdictions;
- additional acquisition-related debt, which could increase our leverage and potentially negatively affect our credit ratings resulting in more restrictive borrowing terms or increased borrowing costs thereby limiting our ability to borrow;
- dilution of stock ownership of existing stockholders;
- difficulties integrating the acquired business or company and in managing and retaining acquired employees, vendors and customers; and

- inaccuracies in our original estimates and assumptions used to assess a transaction, which may result in us not realizing the expected financial or strategic benefits of any such transaction.

In addition, U.S. and foreign regulatory approvals required in connection with an acquisition may take longer than anticipated to obtain, may not be forthcoming or may contain burdensome conditions, which may jeopardize, delay or reduce the anticipated benefits of the transaction to us.

From time to time, we may also seek to divest or wind down portions of our business, either acquired or otherwise, or we may exit minority investments, any of which could materially affect our cash flows and results of operations. Such dispositions involve risks and uncertainties, including our ability to sell such businesses on terms acceptable to us, or at all, disruption to other parts of our business, potential loss of employees or customers, or exposure to unanticipated liabilities or ongoing obligations to us following any such dispositions. In addition, dispositions may include the transfer of technology and/or the licensing of certain IP rights to third-party purchasers, which could limit our ability to utilize such IP rights or assert these rights against such third-party purchasers or other third parties.

We may be involved in legal proceedings, including IP, anti-competition and securities litigation, employee-related claims and regulatory investigations, which could, among other things, divert efforts of management and result in significant expense and loss of our IP rights.

We are often involved in legal proceedings, including cases involving our IP rights and those of others, anti-competition and commercial matters, acquisition-related suits, securities class action suits, employee-related claims and other actions. From time to time, we may also be involved or required to participate in regulatory investigations or inquiries, such as the ongoing investigation by the FTC into certain of our contracting and business practices, which may evolve into legal or other administrative proceedings. Growing public concern over concentration of economic power in corporations is likely to result in increased anti-competition legislation, regulation and enforcement activity. Litigation or settlement of such actions, regardless of their merit, or involvement in regulatory investigations or inquiries, can be costly, lengthy, complex and time consuming, diverting the attention and energies of our management and technical personnel.

The industries in which we operate are characterized by companies holding large numbers of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including actions by patent-holding companies that do not make or sell products. From time to time, third parties assert against us and our customers and distributors their IP rights to technologies that are important to our business. For example, in August 2020 judgment was entered against Broadcom and Apple for infringement of certain patents pursuant to which California Institute of Technology was awarded past damages of $270.2 million from Broadcom and $837.8 million from Apple (plus, in each case, interest thereon from the date of the judgment), for which Apple is seeking indemnification from Broadcom. Although we are appealing this judgment, there are no assurances that we will be successful.

Many of our customer agreements, and in some cases our asset sale agreements, and/or the laws of certain jurisdictions may require us to indemnify our customers or purchasers for third-party IP infringement claims, including costs to defend those claims, and payment of damages in the case of adverse rulings. However, our CMs and suppliers may or may not be required to indemnify us should we or our customers be subject to such third-party claims. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. If any pending or future proceedings result in an adverse outcome, we could be required to:

- cease the manufacture, use or sale of the infringing products, processes or technology and/or make changes to our processes or products;
- pay substantial damages for past, present and future use of the infringing technology, including up to treble damages if willful infringement is found;
- pay fines or disgorge profits or other payments, and/or cease certain conduct and/or modify our contracting or business practices, in connection with any unfavorable resolution of a governmental investigation;
- expend significant resources to develop non-infringing technology;
- license technology from the third-party claiming infringement, which license may not be available on commercially reasonable terms, or at all;
- enter into cross-licenses with our competitors, which could weaken our overall IP portfolio and our ability to compete in particular product categories;
- pay substantial damages to our direct or end customers to discontinue use or replace infringing technology with non-infringing technology; or
- relinquish IP rights associated with one or more of our patent claims.

Any of the foregoing results could have a material adverse effect on our business, financial condition and results of operations.

In addition, we may be obligated to indemnify our current or former directors or employees, or former directors or employees of companies that we have acquired, in connection with litigation or regulatory investigations. These liabilities could be substantial and may include, among other things, the cost of defending lawsuits against these individuals, as well as stockholder derivative suits; the cost of government, law enforcement or regulatory investigations; civil or criminal fines and penalties; legal and other expenses; and expenses associated with the remedial measure, if any, which may be imposed.

Our operating results are subject to substantial quarterly and annual fluctuations.

Our operating results have fluctuated in the past and are likely to fluctuate in the future. These fluctuations may occur on a quarterly and annual basis and are due to a number of factors, many of which are beyond our control. In addition to many of the risks described elsewhere in this "Risk Factors" section, these factors include, among others:

- customer concentration and the gain or loss of significant customers;
- the timing of launches by our customers of new product in which our products are included and changes in end-user demand for our customers' the products;
- fluctuations in the levels of component or product inventories held by our customers;
- the shift to cloud-based IT solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers;
- the timing of new software contracts and renewals, as well as the timing of any terminations of software contracts that require us to refund to customers any pre-paid amounts under the contract;
- our ability to timely develop, introduce and market new products and technologies;
- the timing and extent of our software license and subscription revenue, and other non-product revenue;
- new product announcements and introductions by us or our competitors;
- seasonality or other fluctuations in demand in our markets;
- timing and amount of research and development and related new product expenditures, and the timing of receipt of any research and development grant monies; and
- timing of any regulatory changes, particularly with respect to trade sanctions and customs duties and tariffs, and tax reform.

The foregoing factors are often difficult to predict, and these, as well as other factors, could materially adversely affect our quarterly or annual operating results. In addition, a significant amount of our operating expenses are relatively fixed in nature. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. As a result, we believe that quarter-to-quarter comparisons of our revenue and operating results may not be meaningful or a reliable indicator of our future performance. If our operating results in one or more future quarters fail to meet the expectations of securities analysts or investors, a significant decline in the trading price of our common stock may occur, which may happen immediately or over time.

Failure to adjust our manufacturing and supply chain to accurately meet customer demand could adversely affect our results of operations.

We make significant decisions, including determining the levels of business that we will seek and accept, production schedules, levels of reliance on contract manufacturing and outsourcing, internal fabrication utilization and other resource requirements, based on our estimates of customer requirements, which may not be accurate.

During the COVID-19 pandemic, we have moved largely to a build to order model and have extended customer lead times substantially in light of global economic uncertainty and supply chain challenges. More typically, however, to ensure the availability of our products we start manufacturing based on customer forecasts, which are not binding. As a result, we incur inventory and manufacturing costs in advance of anticipated sales that may be substantially lower than expected. If actual demand for our products is lower than forecast, we may also experience higher inventory carrying and operating costs and product obsolescence. Because certain of our sales, research and development, and internal manufacturing overhead expenses are relatively fixed, a reduction in customer demand may also decrease our gross margin and operating income.

Conversely, customers often require rapid increases in production on short notice. We may be unable to secure sufficient materials or contract manufacturing or test capacity to meet such increases in demand. This could damage our customer relationships, reduce revenue growth and margins, subject us to additional liabilities, harm our reputation, and prevent us from taking advantage of opportunities.

We operate in the highly cyclical semiconductor industry, which is subject to significant downturns.

The semiconductor industry is highly cyclical and is characterized by constant and rapid technological change and price erosion, evolving technical standards, frequent new product introductions, short product life cycles (for semiconductors and for many of the end products in which they are used) and wide 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 industry in general, and in our business in particular. Periods of industry downturns have been characterized by diminished demand for end-user products, high inventory levels and periods of inventory adjustment, under-utilization of manufacturing capacity, changes in revenue mix and accelerated 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 industry or market downturns, our net revenue may decline and our financial condition and results of operations may suffer.

Winning business in the semiconductor solutions industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.

Our semiconductor business is dependent on us winning competitive bid selection processes, known as "design wins". These selection processes are typically lengthy and can require us to dedicate significant development expenditures and scarce engineering resources in pursuit of a single customer opportunity. Failure to obtain a particular design win may prevent us from obtaining design wins in subsequent generations of a particular product. This can result in lost revenue and can weaken our position in future selection processes.

Winning a product design does not guarantee sales to a customer. A delay or cancellation of a customer's plans could materially and adversely affect our financial results, as we incur significant expense in the design process and may generate little or no revenue from it. In addition, the timing of design wins is unpredictable and implementing production for a major design win, or multiple design wins at the same time, may strain our resources and those of our CMs. In such event, we may be forced to dedicate significant additional resources and incur additional costs and expenses. Further, often customers will only purchase limited numbers of evaluation units until they qualify the products and/or the manufacturing line for those products. The qualification process can take significant time and resources. Delays in qualification or failure to qualify our products may cause a customer to discontinue use of our products and result in a significant loss of revenue. Finally, customers could choose at any time to stop using our products or could fail to successfully market and sell their products, which could reduce demand for our products, and cause us to hold excess inventory, materially adversely affecting our business, financial condition and results of operations. These risks are exacerbated by the fact that many of our products, and the end products into which our products are incorporated, often have very short life cycles.

Competition in our industries could prevent us from growing our revenue.

The industries in which we operate are highly competitive and characterized by rapid technological changes, evolving industry standards, changes in customer requirements, often aggressive pricing practices and, in some cases, new delivery methods. We expect competition in these industries to continue to increase as existing competitors improve or expand their product offerings or as new competitors enter our markets.

Some of our competitors have longer operating histories, greater name recognition, a larger installed customer base, larger technical staffs, more established relationships with vendors or suppliers, or greater manufacturing, distribution, financial, research and development, technical and marketing resources than us. We also face competition from numerous smaller companies that specialize in specific aspects of the highly fragmented software industry, open source authors who may provide software and IP for free, competitors who may offer their products through try-and-buy or freemium models, and customers who may develop competing products.

In addition, the trend toward consolidation is changing the competitive landscape. We expect this trend to continue, which may result in combined competitors having greater resources than us. Some of our competitors may also receive financial and other support from their home country government or may have a greater presence in key markets, a larger customer base, a more comprehensive IP portfolio or better patent protection than us.

The actions of our competitors, in the areas of pricing and product bundling in particular, could have a substantial adverse impact on us. Further, competitors may leverage their superior market position, as well as IP or other proprietary information, including interface, interoperability or technical information, in new and emerging technologies and platforms that may inhibit our ability to compete effectively. If we are unable to compete successfully, we may lose market share for our products or incur significant reduction in our gross margins, either of which could have a material adverse effect on our business and results of operations.

A prolonged disruption of our manufacturing facilities, research and development facilities, warehouses or other significant operations, or those of our suppliers, could have a material adverse effect on our business, financial condition and results of operations.

Although we operate a primarily outsourced manufacturing business model, we also rely on our own manufacturing facilities, in particular in Fort Collins, Colorado, Singapore, and Breinigsville, Pennsylvania. We use these internal fabrication facilities for products utilizing our innovative and proprietary processes. Our Fort Collins and Breinigsville facilities are the sole sources for the FBAR components used in many of our wireless devices and for the indium phosphide-based wafers used in our fibre optics products, respectively. Many of our facilities, and those of our CMs and suppliers, are located in California and the Pacific Rim region, which have above average seismic activity and severe weather activity. In addition, a significant majority of our research and development personnel are located the Czech Republic, India, Israel, Singapore and the U.S., with the expertise of the personnel at each such location tending to be focused on one or two specific areas, and our primary warehouse is in Malaysia.

A prolonged disruption at or shut-down of one or more of our manufacturing facilities or warehouses for any reason, especially our Colorado, Singapore, Malaysia and Pennsylvania facilities, or those of our CMs or suppliers, due to natural- or man-made disasters or other events outside of our control, such as equipment malfunction or widespread outbreaks of acute illness, including COVID-19, would limit our capacity to meet customer demands and delay new product development until a replacement facility and equipment, if necessary, were found. Any such event would likely disrupt our operations, delay production, shipments and revenue, result in us being unable to timely satisfy customer demand, expose us to claims by our customers, result in significant expense to repair or replace our affected facilities, and, in some instances, could significantly curtail our research and development efforts in a particular product area or target market. As a result, we could forgo revenue opportunities, potentially lose market share, damage our customer relationships and be subject to litigation and additional liabilities, all of which could materially and adversely affect our business. Although we purchase insurance to mitigate certain losses, such insurance often carries a high deductible amount and any uninsured losses could negatively affect our operating results. In addition, even if we were able to promptly resume production of our affected products, if our customers cannot timely resume their own manufacturing following such an event, they may cancel or scale back their orders from us and this may in turn adversely affect our results of operations. Such events could also result in increased fixed costs relative to the revenue we generate and adversely affect our results of operations.

We may be unable to maintain appropriate manufacturing capacity or product yields at our own manufacturing facilities, which could adversely affect our relationships with our customers, and our business, financial condition and results of operations.

We must maintain appropriate capacity and product yields at our own manufacturing facilities to meet anticipated customer demand. From time to time, this requires us to invest in expansion or improvements of those facilities, which often involves substantial cost and other risks. Such expanded manufacturing capacity may still be insufficient, or may not come online soon enough, to meet customer demand and we may have to put customers on product allocation, forgo sales or lose customers as a result. Conversely, if we overestimate customer demand, we would experience excess capacity and fixed costs at these facilities will not be fully absorbed, all of which could adversely affect our results of operations. Similarly, reduced product yields, due to design or manufacturing issues or otherwise, may involve significant time and cost to remedy and cause delays in our ability to supply product to our customers, all of which could cause us to forgo sales, incur liabilities or lose customers, and harm our results of operations.

In addition, future government restrictions imposed as a result of the COVID-19 pandemic that limit our manufacturing capabilities could severely impact our ability to manufacture our proprietary products, adversely affecting our wireless business.

Any failure of our IT systems or one or more of our corporate infrastructure vendors to provide necessary services could have a material adverse effect on our business.

Our business depends on various IT systems and outsourced IT services. We rely on third-party vendors to provide critical corporate infrastructure services and to adequately address cyber security threats to their own systems. Services provided by these third parties include services related to financial reporting, product orders and shipping, human resources, benefit plan administration, IT network development and network monitoring. While we may be entitled to damages if our vendors fail to perform under their agreements with us, any award may be insufficient to cover the actual costs incurred by us and, as a result of a vendor’s failure to perform, we may be unable to collect any damages.

Any failure of these internal or third-party systems and services to operate effectively could disrupt our operations and could have a material adverse effect on our business, financial condition and results of operations.

Our gross margin is dependent on a number of factors, including our product mix, price erosion, acquisitions we may make, level of capacity utilization and commodity prices.

Our gross margin is highly dependent on product mix, which is susceptible to seasonal and other fluctuations in our markets. A shift in sales mix away from our higher margin products, as well as the timing and amount of our software licensing and non-product revenue, could adversely affect our future gross margin percentages. In addition, increased competition and the existence of product alternatives, more complex engineering requirements, lower demand or reductions in our technological lead compared to our competitors, and other factors may lead to further price erosion, lower revenue and lower margin.

In addition, semiconductor manufacturing requires significant capital investment, leading to high fixed costs, including depreciation expense. If we are unable to utilize our owned manufacturing facilities at a high level, the fixed costs associated with these facilities will not be fully absorbed, resulting in higher average unit costs and a lower gross margin. Furthermore, fluctuations in commodity prices could negatively impact our margins. We do not hedge our exposure to commodity prices, some of which are very volatile, and sudden or prolonged increases in commodities prices may adversely affect our gross margin.

Our gross margin may also be adversely affected if businesses or companies that we acquire have different gross margin profiles and by expenses related to such acquisitions.

We utilize a significant amount of IP in our business. If we are unable or fail to protect our IP, our business could be adversely affected.

Our success depends in part upon protecting our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks and trade secrets, as well as customary contractual protections with our customers, suppliers, employees and consultants. We may be required to spend significant resources to monitor and protect our IP rights, including unauthorized use of our products, the usage rates of the software seat licenses and subscriptions that we sell, and even with significant expenditures, we may not be able to protect the IP rights that are valuable to our business. We are unable to predict or assure that:

- our IP rights will not lapse or be invalidated, circumvented, challenged, or, in the case of third-party IP rights licensed to us, be licensed to others;
- our IP rights will provide competitive advantages to us;
- rights previously granted by third parties to IP licensed or assigned to us, including portfolio cross-licenses, will not hamper our ability to assert our IP rights or hinder the settlement of currently pending or future disputes;
- any of our pending or future patent, trademark or copyright applications will be issued or have the coverage originally sought;
- our IP rights will be enforced in certain jurisdictions where competition may be intense or where legal protection may be weak; or
- we have sufficient IP rights to protect our products or our business.

Effective IP protection may be unavailable or more limited in other jurisdictions, relative to those protections available in the U.S., and may not be applied for or may be abandoned in one or more relevant jurisdictions. In addition, when patents expire, we lose the protection and competitive advantages they provided to us.

We also generate revenue from licensing royalty payments and from technology claim settlements relating to certain of our IP. Licensing of our IP rights, particularly exclusive licenses, may limit our ability to assert those IP rights against third parties, including the licensee of those rights. In addition, we may acquire companies with IP that is subject to licensing obligations to other third parties. These licensing obligations may extend to our own IP following any such acquisition and may limit our ability to assert our IP rights. From time to time, we pursue litigation to assert our IP rights, including, in some cases, against our customers and suppliers. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. Conversely, third parties may pursue IP litigation against us, including as a result of our IP licensing business. An adverse decision in such types of legal action could limit our ability to assert our IP rights and limit the value of our technology, including the loss of opportunities to sell or license our technology to others or to collect royalty payments, which could otherwise negatively impact our business, financial condition and results of operations.

From time to time, we may need to obtain additional IP licenses or renew existing license agreements. We are unable to predict whether these license agreements can be obtained or renewed on acceptable terms or at all.

If our software products do not remain compatible with ever-changing operating environments, platforms, or third-party products, demand for our products and services could decrease, which could materially adversely affect our business.

We may be required to make substantial modification of our products to maintain compatibility with operating systems, systems software and computer hardware used by our customers or to provide our customers with desired features or capabilities. We must also continually address the challenges of dynamic and accelerating market trends and competitive developments, such as the emergence of advanced persistent threats in the security space to compete effectively. There can be no assurance that we will be able to adapt our products in response to these developments.

Further, our software solutions interact with a variety of software and hardware developed by third parties. If we lose access to third-party code and specifications for the development of code, this could negatively impact our ability to develop compatible software. In addition, if software providers and hardware manufacturers, including some of our largest vendors, adopt new policies restricting the use or availability of their code or technical documentation for their operating systems, applications, or hardware, or otherwise impose unfavorable terms and conditions for such access, this could result in higher research and development costs for the enhancement and modification of our existing products or development of new products. Any additional restrictions could materially adversely affect our business, financial condition and operating results and cash flow.

Failure to enter into software license agreements on a satisfactory basis could materially adversely affect our business.

Many of our existing customers have multi-year enterprise software license agreements, some of which involve substantial aggregate fee amounts. Customer renewal rates may decline or fluctuate as a result of a number of factors, including the level of customer satisfaction with our solutions or customer support, customer budgets and the pricing of our solutions as compared with the solutions offered by our competitors, any of which may cause our revenue to grow more slowly than expected, if at all. The failure to renew customer agreements of similar scope, on terms that are commercially attractive to us, could materially adversely affect our business, financial condition and operating results and cash flow.

Certain software that we use in our products is licensed from third parties and may not be available to us in the future, which may delay product development and production or cause us to incur additional expense.

Some of our solutions contain software licensed from third parties, some of which may not be available to us in the future on terms that are acceptable to us or allow our products to remain competitive. The loss of these licenses or the inability to maintain any of them on commercially acceptable terms could delay development of future products or the enhancement of existing products.

Certain software we use is from open source code sources, which, under certain circumstances could materially adversely affect our business, financial condition, operating results and cash flow.

Some of our products contain software from open source code sources, the use of which may subject us to certain conditions, including the obligation to offer such products for no cost or to make the proprietary source code of those products publicly available. Further, although some open source vendors provide warranty and support agreements, it is common for such software to be available "as-is" with no warranty, indemnity or support. Although we monitor our use of such open source code to avoid subjecting our products to unintended conditions, such use, under certain circumstances, could materially adversely affect our business, financial condition and operating results and cash flow, including if we are required to take remedial action that may divert resources away from our development efforts.

We are subject to warranty claims, product recalls and product liability.

From time to time, we may be subject to warranty or product liability claims that may lead to significant expense. Our customer contracts typically contain warranty and indemnification provisions, and in certain cases may also contain liquidated damages provisions, relating to product quality issues. The potential liabilities associated with such provisions are significant, and in some cases, including in agreements with some of our largest customers, are potentially unlimited. Any such liabilities may greatly exceed any revenue we receive from the relevant products. Costs, payments or damages incurred or paid by us in connection with warranty and product liability claims and product recalls could materially adversely affect our financial condition and results of operations. We may also be exposed to such claims as a result of any acquisition we may undertake in the future.

Product liability insurance is subject to significant deductibles and there is no guarantee that such insurance will be available or adequate to protect against all such claims, or we may elect to self-insure with respect to certain matters. For example, it is possible for one of our customers to recall a product containing one of our semiconductor devices. In such an event, we may incur significant costs and expenses, including among others, replacement costs, contract damage claims from our customers and reputational harm. Although we maintain reserves for reasonably estimable liabilities and purchase product liability insurance, our reserves may be inadequate to cover the uninsured portion of such claims. Conversely, in some cases, amounts we reserve may ultimately exceed our actual liability for particular claims and may need to be reversed.

The complexity of our products could result in unforeseen delays or expense or undetected defects or bugs, which could adversely affect the market acceptance of new products, damage our reputation with current or prospective customers, and materially and adversely affect our operating costs.

Highly complex products, such as those we offer, may contain defects and bugs when they are first introduced or as new versions, software documentation or enhancements are released, or their release may be delayed due to unforeseen difficulties during product development. If any of our products or third-party components used in our products, contain defects or bugs, or have reliability, quality or compatibility problems, we may not be able to successfully design workarounds. Furthermore, if any of these problems are not discovered until after we have commenced commercial production or deployment of a new product, we may be required to incur additional development costs and product recall, repair or replacement costs. Significant technical challenges also arise with our software products because our customers license and deploy our products across a variety of computer platforms and integrate them with a number of third party software applications and databases. As a result, if there is system-wide failure or an actual or perceived breach of information integrity, security or availability occurs in one of our end-user customer’s system, it may be difficult to determine which product is at fault and we could ultimately be harmed by the failure of another supplier’s product. Consequently, our reputation may be damaged and customers may be reluctant to buy our products, which could materially and adversely affect our ability to retain existing customers and attract new customers. To resolve these problems, we may have to invest significant capital and other resources and we would likely lose, or experience a delay in, market acceptance of the affected product or products. These problems may also result in claims against us by our customers or others. For example, if a delay in the manufacture and delivery of our products causes the delay of a customer's end-product delivery, we may be required, under the terms of our agreement with that customer, to compensate the customer for the adverse effects of such delays. As a result, our financial results could be materially adversely affected.

We make substantial investments in research and development and unsuccessful investments could materially adversely affect our business, financial condition and results of operations.

The industries in which we compete are characterized by rapid technological change, changes in customer requirements, frequent new product introductions and enhancements, short product cycles and evolving industry standards, and new delivery methods. In addition, semiconductor products transition over time to increasingly smaller line width geometries and failure to successfully transition to smaller geometry process technologies could impair our competitive position. In order to remain competitive, we have made, and expect to continue to make, significant investments in research and development. If we fail to develop new and enhanced products and technologies, if we focus on technologies that do not become widely adopted, or if new competitive technologies that we do not support become widely accepted, demand for our products may be reduced. Increased investments in research and development or unsuccessful research and development efforts could cause our cost structure to fall out of alignment with demand for our products, which would have a negative impact on our financial results.

We collect, use, store, or otherwise process personal information, which subjects us to privacy and data security laws and contractual commitments, and our actual or perceived failure to comply with such laws and commitments could harm our business.

We collect, use and store (collectively, "process") a high volume, variety and velocity of certain personal information in connection with the operation of our business. This creates various levels of privacy risks across different parts of our business, depending on the type of personal information, the jurisdiction in question and the purpose of their processing. The personal information we process is subject to an increasing number of federal, state, local, and foreign laws and regulations regarding privacy and data security, as well as contractual commitments. Privacy legislation and other data protection regulations, enforcement and policy activity in this area are expanding rapidly in many jurisdictions and creating a complex regulatory compliance environment. The cost of complying with and implementing these privacy-related and data governance measures could be significant as they may create additional burdensome security, business process, business record or data localization requirements. Concerns about government interference, sovereignty, expanding privacy, cyber security and data governance legislation could adversely affect our customers and our products and services, particularly in cloud computing, artificial intelligence and our own data management practices. The theft, loss or misuse of personal data collected, used, stored or transferred by us to run our business could result in significantly increased business and security costs or costs related to defending legal claims. Any inadvertent failure or perceived failure by us to comply with privacy, data governance or cyber security obligations may result in governmental enforcement actions, litigation, substantial fines and damages, and could cause our customers to lose trust in us, which could have an adverse effect on our reputation and business.

We are subject to environmental, health and safety laws, which could increase our costs, restrict our operations and require expenditures that could have a material adverse effect on our results of operations and financial condition.

We are subject to a variety of international laws and regulations relating to the use, disposal, clean-up of and human exposure to hazardous materials. Compliance with environmental, health and safety requirements could, among other things, require us to modify our manufacturing processes, restrict our ability to expand our facilities, or require us to acquire pollution control equipment, all of which can be very costly. Any failure by us to comply with such requirements could result in the limitation or suspension of the manufacture of our products and could result in litigation against us and the payment of significant fines and damages by us in the event of a significant adverse judgment. In addition, complying with any cleanup or remediation obligations for which we are or become responsible could be costly and have a material adverse effect on our business, financial condition and results of operations.

Changing requirements relating to the materials composition of our semiconductor products, including the restrictions on lead and certain other substances in electronic products sold in various countries, including the U.S., China and Japan, and in the European Union, increase the complexity and costs of our product design and procurement operations and may require us to re-engineer our products. Such re-engineering may result in excess inventory or other additional costs and could have a material adverse effect on our results of operations. We may also experience claims from employees from time to time with regard to exposure to hazardous materials or other workplace related environmental claims.

Social and environmental responsibility regulations, policies and provisions, as well as customer demand, may make our supply chain more complex and may adversely affect our relationships with customers.

There is an increasing focus on corporate social and environmental responsibility in the semiconductor industry, particularly with OEMs that manufacture consumer electronics. A number of our customers have adopted, or may adopt, procurement policies that include social and environmental responsibility provisions that their suppliers should comply with, or they may seek to include such provisions in their procurement terms and conditions. An increasing number of participants in the semiconductor industry are also joining voluntary social responsibility initiatives such as the U.N. Global Compact, a voluntary initiative for businesses to develop, implement and disclose sustainability policies and practices. These social and environmental responsibility provisions and initiatives are subject to change, can be unpredictable, and may be difficult and expensive for us to comply with, given the complexity of our supply chain and our significant outsourced manufacturing. If we are unable to comply, or are unable to cause our suppliers or CMs to comply, with such policies or provisions, a customer may stop purchasing products from us, and may take legal action against us, which could harm our reputation, revenue and results of operations.

In addition, as part of their corporate social and environmental responsibility programs, an increasing number of OEMs are seeking to source products that do not contain minerals sourced from areas where proceeds from the sale of such minerals are likely to be used to fund armed conflicts, such as in the Democratic Republic of Congo. This could adversely affect the sourcing, availability and pricing of minerals used in the manufacture of semiconductor devices, including our products. As a result, we may face difficulties in satisfying these customers’ demands, which may harm our sales and operating results.

The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future, which could harm our revenue and gross profit.

The semiconductor products we develop and sell are used for high volume applications. As a result, the prices of those products have often decreased rapidly. Gross profit on our products may be negatively affected by, among other things, pricing pressures from our customers. In the past, we have reduced the average selling prices of our products in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. In addition, some of our customer agreements provide for volume-based pricing and product pricing roadmaps, which can also reduce the average selling prices of our products over time. Our margins and financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing manufacturing costs, or developing new and higher value-added products on a timely basis.

A breach of our security systems may have a material adverse effect on our business.

Our security systems are designed to maintain the physical security of our facilities and protect our customers’, suppliers’ and employees’ confidential information, as well as our own proprietary information. However, we are also dependent on a number of third-party cloud-based and other service providers of critical corporate infrastructure services relating to, among other things, human resources, electronic communication services and certain finance functions, and we are, out of necessity, dependent on the security systems of these providers. In addition, all software, including the security technologies produced by us have had occasionally in the past and may have in the future vulnerabilities that if left unmanaged could reduce the overall level of security.

Accidental or willful security breaches or other unauthorized access of our facilities, our information systems or the systems of our service providers, or the existence of computer viruses or malware in our or their data or software could expose us to a risk of information loss and misappropriation of proprietary and confidential information, including information relating to our products or customers and the personal information of our employees. We have, from time to time, also been subject to, or attempts of, unauthorized network intrusions and malware on our own IT networks. As a result of the COVID-19 pandemic, remote access to our networks and systems has increased substantially. While we have taken steps to secure our networks and systems, we may be more vulnerable to a successful cyber-attack or information security incident while our workforce works remotely.

Certain of our software products are intended to manage and secure IT infrastructures and environments, and as a result, we expect these products to be ongoing targets of cyber security attacks. Open source code or other third-party software used in these products could also be targeted. Additionally, we use third-party data centers, which may also be subject to hacking or accidental incidents. Although we continually seek to improve our countermeasures to prevent such incidents, we may be unable to anticipate every scenario and it is possible that certain cyber threats or vulnerabilities will be undetected or unmitigated in time to prevent an attack or an accidental incident on us and our customers. Cyber security attacks could require significant expenditures of our capital and diversion of our resources. Additionally, efforts by malicious cyber actors or others could cause interruptions, delays or cessation of our product licensing, or modification of our software, which could cause us to lose existing or potential customers. A successful cyber security attack involving our products and IT infrastructure could also negatively impact the market perception of their effectiveness and adversely affect our reputation, relationship with our customers and our financial results.

Any theft, accidental loss or misuse of confidential, personally identifiable or proprietary information could disrupt our business and result in, among other things, unfavorable publicity, damage to our reputation, loss of our trade secrets and other competitive information, difficulty in marketing our products, allegations by our customers that we have not performed our contractual obligations, litigation by affected parties and possible financial obligations for liabilities and damages related to the theft or misuse of such information, as well as fines and other sanctions resulting from any related breaches of data privacy regulations (such as the General Data Protection Regulation), any of which could have a material adverse effect on our business, profitability and financial condition. Interruptions in our operations and services or disruptions to the functionality provided by our software, including the operation of our global civilian cyber intelligence threat network, could adversely impact our revenues or cause customers to cease doing business with us. In addition, our business would be harmed if any of the events of this nature caused our customers and potential customers to believe our services are unreliable. Our operations are dependent upon our ability to protect our technology infrastructure against damage from business continuity events that could have a significant disruptive effect on our operations. Since the techniques used to obtain unauthorized access to systems or to otherwise sabotage them, change frequently and are often not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures.

Fluctuations in foreign exchange rates could result in losses.

We operate global businesses and our consolidated financial results are reported in U.S. dollars. However, some of the revenue and expenses of our foreign subsidiaries are denominated in local currencies. Fluctuations in foreign exchange rates against the U.S. dollar could result in substantial changes in reported revenues and operating results due to the foreign exchange impact of translating these transactions into U.S. dollars.

In the normal course of business, we employ various hedging strategies to partially mitigate these risks, including the use of derivative instruments. These strategies may not be effective in protecting us against the effects of fluctuations in foreign exchange rates. As a result, fluctuations in foreign exchange rates could result in financial losses.

Risks Related to Our Taxes

Changes in tax legislation or policies could materially impact our financial position and results of operations.

Corporate tax reform, anti-base-erosion rules and tax transparency continue to be high priorities in many jurisdictions. As a result, policies regarding corporate income and other taxes in numerous jurisdictions are under heightened scrutiny and tax reform legislation has been, and will likely continue to be, proposed or enacted in a number of jurisdictions in which we operate.

After enactment of the U.S. Tax Cuts and Jobs Act (the “2017 Tax Reform Act”), most of our income is taxable in the U.S. with a significant portion taxable under the Global Intangible Low-Taxed Income (“GILTI”) regime. Beginning in fiscal year 2027, the deduction allowable under the GILTI regime will decrease from 50% to 37.5%, which will increase the effective tax rate imposed on our income. Further, if the U.S. tax rate increases or the deduction allowable under the GILTI regime is further reduced or eliminated, our provision for income taxes, net income, and cash flows would be adversely impacted

In addition, many countries are implementing legislation and other guidance to align their international tax rules with the Organisation for Economic Co-operation and Development’s (“OECD”) Base Erosion and Profit Shifting recommendations and action plan that aim to standardize and modernize global corporate tax policy, including changes to cross-border tax, transfer pricing documentation rules, and nexus-based tax incentive practices. The OECD is also continuing discussions surrounding fundamental changes in allocation of profits among tax jurisdictions in which companies do business, as well as the implementation of a global minimum tax (namely the “Pillar One” and “Pillar Two” proposals). As a result of this heightened scrutiny, prior decisions by tax authorities regarding treatments and positions of corporate income taxes could be subject to enforcement activities, and legislative investigation and inquiry, which could also result in changes in tax policies or prior tax rulings. Any such changes may also result in the taxes we previously paid being subject to change. Further, many jurisdictions have passed, and may pass additional legislation, intended to alleviate the economic burdens of COVID-19 and to fund economic recovery and growth, including various temporary tax incentives or relief and restricted tax measures, which could result in future tax increases. We cannot predict the extent to which the COVID-19 pandemic will impact our tax liabilities and are continuing to evaluate the impact of the new legislation to our financial statements.

Any substantial changes in domestic or international corporate tax policies, regulations or guidance, enforcement activities or legislative initiatives may materially adversely affect our business, the amount of taxes we are required to pay and our financial condition and results of operations generally.

If the tax incentives or tax holiday arrangements we have negotiated change or cease to be in effect or applicable for any reason, or if our assumptions and interpretations regarding tax laws and incentives or holiday arrangements prove to be incorrect, our corporate income taxes could significantly increase.

Our operations are currently structured to benefit from the various tax incentives extended to us in various jurisdictions to encourage investment or employment. For example, absent our principal tax incentives from the Singapore Economic Development Board, which is scheduled to expire in 2025, the corporate income tax rate that would otherwise apply to our Singapore taxable income would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. Each tax incentive and tax holiday is subject to our compliance with various operating and other conditions and may, in some instances, be amended or terminated prior to their scheduled termination date by the relevant governmental authority. If we cannot, or elect not to, comply with the operating conditions included in any particular tax incentive or tax holiday, we could, in some instances, be required to refund previously realized material tax benefits, or if such tax incentive or tax holiday is terminated prior to its expiration absent a new incentive applying, we will lose the related tax benefits earlier than scheduled. In addition, we may be required, or elect, to modify our operational structure and tax strategy in order to keep an incentive, which could result in a decrease in the benefits of the incentive. Our tax incentives and tax holiday, before taking into consideration the effects of the 2017 Tax Reform Act and other indirect tax provisions, increased the benefit from income taxes by approximately $833 million in the aggregate and increased diluted net income per share by $1.98 for fiscal year 2020.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded, we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows.

Our benefit from income taxes and overall cash tax costs are affected by a number of factors that could materially, adversely affect financial results.

Significant judgment is required in determining our worldwide benefit from income taxes. In the ordinary course of our business, there are many transactions where the ultimate tax determination is uncertain. Additionally, our calculations of income taxes payable currently and on a deferred basis are based on our interpretations of applicable tax laws in the jurisdictions in which we are required to file tax returns. Although we believe our tax estimates are reasonable, there is no assurance that the final determination of our income tax liability will not be materially different than what is reflected in our income tax provisions and accruals.

Our benefit from income taxes is subject to volatility and could be adversely affected by numerous factors including:

- reorganization or restructuring of our businesses, tangible and intangible assets, outstanding indebtedness and corporate structure;
- jurisdictional mix of our income and assets;
- changes in the allocation of income and expenses, including adjustments related to changes in our corporate structure, acquisitions or tax law;
- changes in U.S and foreign tax laws and regulations, changes to the taxation of earnings of foreign subsidiaries, taxation of U.S. income generated from foreign sources, the deductibility of expenses attributable to income and foreign tax credit rules;
- tax effects of increases in non-deductible employee compensation; and
- changes in tax accounting rules or principles and in the valuation of deferred tax assets and liabilities.

We have adopted transfer pricing policies that call for the provision of services, the sale of products, the arrangement of financing and the grant of licenses from one affiliate to another at prices that we believe are negotiated on an arm’s length basis. Our taxable income is dependent upon acceptance by local authorities that our operational practices and intercompany transfer pricing are on an arm’s length basis. Due to inconsistencies in application of the arm’s length standard among taxing authorities, as well as lack of comprehensive treaty-based protection, transfer pricing challenges by tax authorities could, if successful, result in adjustments for prior or future years. The effects of any such changes could subject us to higher taxes and our earnings, results of operations and cash flow would be adversely affected.

In addition, we are subject to, and are under, tax audit in various jurisdictions, and such jurisdictions may assess additional income tax against us. Although we believe our tax positions are reasonable, the final determination of tax audits could be materially different from our income tax provisions and accruals. The ultimate result of an audit could have a material adverse effect on our results of operations and cash flows in the period or periods for which that determination is made.

The Internal Revenue Service may not agree that prior to our redomiciliation into the U.S., our predecessor, Broadcom Limited should have been treated as a foreign corporation for U.S. federal income tax purposes.

Although Broadcom Limited, our predecessor, was a Singapore entity, the Internal Revenue Service ("IRS") may assert that following our acquisition of BRCM, Broadcom Limited should have been treated as a U.S. corporation for U.S. federal income tax purposes pursuant to Section 7874 of the Internal Revenue Code of 1986, as amended (the "Code"). If the IRS were to determine that under Section 7874 of the Code, the former shareholders of BRCM held at least 60% of the vote or value of the ordinary shares of Broadcom Limited immediately after our acquisition of BRCM, such percentage referred to as the "Section 7874 Percentage", Broadcom Limited would be treated as a "surrogate foreign corporation" and several limitations could then apply to BRCM. For example, BRCM would be prohibited from using its net operating losses, foreign tax credits or other tax attributes to offset the income or gain recognized by reason of the transfer of property to a foreign related person during the 10-year period following our acquisition of BRCM or any income received or accrued during such period by reason of a license of any property by BRCM to a foreign related person. Moreover, in such case, Section 4985 of the Code and rules related thereto would impose an excise tax on the value of certain stock compensation held directly or indirectly by certain BRCM "disqualified individuals" (including former officers and directors of BRCM) at a rate equal to 15%, but only if a gain is otherwise recognized by BRCM former shareholders as a result of our acquisition of BRCM. If the IRS were to determine the Section 7874 Percentage was 80% or more, then Broadcom Limited would be treated as a U.S. corporation for U.S. federal income tax purposes.

While we believe the Section 7874 Percentage was significantly less than 60%, determining the Section 7874 Percentage is complex and is subject to factual and legal uncertainties. There can be no assurance that the IRS will agree with our position.

Risks Related to Our Indebtedness

Our substantial indebtedness could adversely affect our financial health and our ability to execute our business strategy.

As of November 1, 2020, the aggregate indebtedness under our senior notes and term loans was $35,610 million and $5,888 million, respectively. We expect to maintain significant levels of indebtedness going forward.

Our substantial indebtedness could have important consequences including:

- increasing our vulnerability to adverse general economic and industry conditions;
- exposing us to interest rate risk due to our variable rate term facilities, which we do not typically hedge against;
- limiting our flexibility in planning for, or reacting to, changes in the economy and the semiconductor industry;
- placing us at a competitive disadvantage compared to our competitors with less indebtedness;
- making it more difficult to borrow additional funds in the future to fund growth, acquisitions, working capital, capital expenditures and other purposes; and
- potentially requiring us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund our other business needs.

In addition, our variable rate indebtedness use LIBOR as a benchmark for establishing the effective interest rate. LIBOR is being phased out and the consequences of changing to alternative reference rates could increase the cost of our variable rate indebtedness.

We receive debt ratings from the major credit rating agencies in the U.S. Factors that may impact our credit ratings include debt levels, planned asset purchases or sales and near-term and long-term production growth opportunities. Liquidity, asset quality, cost structure, reserve mix and commodity pricing levels could also be considered by the rating agencies. While we are focused on maintaining investment grade ratings from these agencies, we may be unable to do so. Any downgrade in our credit rating or the ratings of our indebtedness, or adverse conditions in the debt capital markets, could:

- adversely affect the trading price of, or market for, our debt securities;

- increase interest expense under our term facilities;
- increase the cost of, and adversely affect our ability to refinance, our existing debt; and
- adversely affect our ability to raise additional debt.

The instruments governing our indebtedness impose certain restrictions on our business.

The instruments governing our indebtedness contain certain covenants imposing restrictions on our business. These restrictions may affect our ability to operate our business, to plan for, or react to, changes in the market conditions or our capital needs and may limit our ability to take advantage of potential business opportunities as they arise. The restrictions placed on us include maintenance of an interest coverage ratio and limitations on our ability to incur certain secured debt, enter into certain sale and lease-back transactions and consolidate, merge, sell or otherwise dispose of all or substantially all of our assets. In addition, the instruments contain customary events of default upon the occurrence of which, after any applicable grace period, the indebtedness could be declared immediately due and payable. In such event, we may not have sufficient available cash to repay such debt at the time it becomes due, or be able to refinance such debt on acceptable terms or at all. Any of the foregoing could materially adversely affect our business, financial condition and results of operations.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on, and to refinance our debt, depends on our future performance, which is subject to economic, financial, competitive and other factors. Our business may not continue to generate cash flow from operations in the future sufficient to satisfy our obligations under our current indebtedness and any future indebtedness we may incur and to make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as reducing or delaying investments or capital expenditures, selling assets, refinancing or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our outstanding indebtedness or future indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms when needed, which could result in a default on our indebtedness.

Risks Related to Owning Our Common Stock

At times, our stock price has been volatile and it may fluctuate substantially in the future, which could result in substantial losses for our investors as well as class action litigation against us and our management which could cause us to incur substantial costs and divert our management's attention and resources.

The trading price of our common stock has, at times, fluctuated significantly and could be subject to wide fluctuations in response to any of the risk factors listed in this "Risk Factors" section, and others, including:

- issuance of new or updated research or other reports by securities analysts;
- fluctuations in the valuation and results of operations of our significant customers as well as companies perceived by investors to be comparable to us;
- announcements of proposed acquisitions by us or our competitors;
- announcements of, or expectations of, additional debt or equity financing transactions;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our common stock;
- issuance, and subsequent sale, of common stock upon conversion of our 8.00% Mandatory Convertible Preferred Stock, Series A ("Mandatory Convertible Preferred Stock");
- hedging or arbitrage trading activity involving our Mandatory Convertible Preferred Stock or common stock; and
- unsubstantiated news reports or other inaccurate publicity regarding us or our business.

These fluctuations are often unrelated or disproportionate to our operating performance. Broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or currency fluctuations, may negatively impact the market price of our common stock. You may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. We are also the subject of a number of lawsuits stemming from our acquisitions. Securities litigation against us, including the lawsuits related to such transactions, could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

A substantial amount of our stock is held by a small number of large investors and significant sales of our common stock by one or more of these holders could cause our stock price to fall.

As of September 30, 2020, we believe 11 of our 20 largest holders of common stock were active institutional investors who held approximately 33% of our outstanding shares of common stock in the aggregate, with Capital World Investors being our largest stockholder with approximately 10% of our outstanding shares of common stock. These investors may sell their shares at any time for a variety of reasons and such sales could depress the market price of our common stock. In addition, any such sales of our common stock by these entities could also impair our ability to raise capital through the sale of additional equity securities.

There can be no assurance that we will continue to declare cash dividends.

Our Board of Directors has adopted a dividend policy pursuant to which we currently pay a cash dividend on our common stock on a quarterly basis. The declaration and payment of any dividend is subject to the approval of our Board of Directors and our dividend may be discontinued or reduced at any time. Because we are a holding company, our ability to pay cash dividends is also limited by restrictions or limitations on our ability to obtain sufficient funds through dividends from subsidiaries. In addition, any payment of dividends on our common stock is subject to and conditioned upon our payment of quarterly dividends on our Mandatory Convertible Preferred Stock. There can be no assurance that we will declare cash dividends in the future in any particular amounts, or at all.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We are headquartered in San Jose, California. We conduct our administration, manufacturing, research and development, sales and marketing in both owned and leased facilities. We believe that our owned and leased facilities are adequate for our present operations. We do not identify or allocate assets by operating segment.

As of November 1, 2020, our owned and leased facilities in excess of 100,000 square feet consisted of:

(Square Feet)	United States	Other Countries	Total
Owned facilities [1]	2,477,165	928,888	3,406,053
Leased facilities [2]	1,679,198	1,111,330	2,790,528
Total facilities	4,156,363	2,040,218	6,196,581

[1] Includes 318,000 square feet and 153,000 square feet of property owned in Malaysia subject to a 60-year land lease with the state authority expiring in May 2051 and March 2077, respectively, subject to renewal at our option.

[2] Building leases expire on varying dates through March 2038 and generally include renewals at our option.

ITEM 3. LEGAL PROCEEDINGS

The information set forth under Note 14. “Commitments and Contingencies” included in Part II, Item 8. of this Annual Report on Form 10-K, is incorporated herein by reference. For an additional discussion of certain risks associated with legal proceedings, see “Risk Factors” above.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER SALE AND PURCHASES OF EQUITY SECURITIES

Market Information

Broadcom common stock is listed on The Nasdaq Global Select Market under the symbol "AVGO".

Holders

As of November 27, 2020, there were 891 holders of record of our common stock. A substantially greater number of stockholders are "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

Dividends

On December 8, 2020, our Board of Directors declared a quarterly cash dividend of $3.60 per share, payable on December 31, 2020 to common stockholders of record on December 21, 2020. Broadcom paid aggregate cash dividends of $5,235 million and $4,235 million to common stockholders in fiscal years 2020 and 2019, respectively. The declaration and payment of any future cash dividends are at the discretion and approval of our Board of Directors and subject to our Board of Directors' continuing determination that they are in our best interests.

Issuer Purchases of Equity Securities

During the fiscal quarter ended November 1, 2020, we paid approximately $185 million in employee withholding taxes due upon the vesting of net settled equity awards. We withheld approximately 1 million shares of common stock from employees in connection with such net share settlement at an average price of $360.62 per share. These shares may be deemed to be "issuer purchases" of shares.

Stock Performance Graph

The following graph shows a comparison of cumulative total return for our common stock, the Standard & Poor's 500 Stock Index (the "S&P 500 Index") and the NASDAQ 100 Index for the five fiscal years ended November 1, 2020. The total return graph and table assume that $100 was invested on October 30, 2015 (the last trading day of our fiscal year 2015) in each of Broadcom Inc. common stock, the S&P 500 Index and the NASDAQ 100 Index and assume that all dividends are reinvested. Indexes are calculated on a month-end basis.

The comparisons in the graph below are based on historical data and are not indicative of, or intended to forecast, the possible future performance of our common stock.

Comparison of Five Year Cumulative Total Return
Among Broadcom Inc., the S&P 500 Index and the NASDAQ 100 Index

avgo-20201101_g1.jpg

	November 1, 2015	October 30, 2016	October 29, 2017	November 4, 2018	November 3, 2019	November 1, 2020
Broadcom Inc.	$ 100.00	$ 139.26	$ 211.88	$ 190.15	$ 265.48	$ 327.95
S&P 500 Index	$ 100.00	$ 104.52	$ 129.48	$ 139.29	$ 160.12	$ 173.97
NASDAQ 100 Index	$ 100.00	$ 104.71	$ 136.97	$ 155.18	$ 183.88	$ 251.37

The graph and the table above shall not be deemed "filed" with the SEC for the purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing made by us with the SEC, regardless of any general incorporation language in such filing.

Securities Authorized for Issuance Under Equity Compensation Plans

The information required by this item regarding securities authorized for issuance under equity compensation plans is incorporated herein by reference to the definitive Proxy Statement for our 2021 annual meeting of stockholders to be filed with the SEC within 120 days after the end of fiscal year 2020.

Table of Contents

ITEM 6. SELECTED FINANCIAL DATA

The following table sets forth the selected consolidated financial data as of and for the last five fiscal years of Broadcom and should be read in conjunction with our annual consolidated financial statements and related notes and information included under the headings "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this Annual Report on Form 10-K.

On November 4, 2019, we acquired the Symantec Business for total consideration of $10.7 billion. On November 5, 2018, we acquired CA for total consideration of $18.8 billion. On November 17, 2017, we acquired Brocade for total consideration of $6.0 billion. On February 1, 2016, we acquired BRCM for total consideration of $35.7 billion. Our financial statements included the results of operations of the acquired companies and estimated fair value of assets acquired and liabilities assumed commencing as of their respective acquisition dates.

	Fiscal Year Ended (1)				
	November 1, 2020	November 3, 2019	November 4, 2018	October 29, 2017	October 30, 2016
	(In millions, except per share data)				
Total net revenue (2)	$23,888	$22,597	$20,848	$17,636	$13,240
Income (loss) from continuing operations (3) (4)	$ 2,961	$ 2,736	$12,629	$ 1,790	$ (1,749)
Income (loss) per common share from continuing operations - basic (3) (4)	$ 6.62	$ 6.80	$ 29.37	$ 4.19	$ (4.46)
Income (loss) per common share from continuing operations - diluted (3) (4)	$ 6.33	$ 6.46	$ 28.48	$ 4.03	$ (4.57)
Cash dividends declared and paid per common share	$ 13.00	$ 10.60	$ 7.00	$ 4.08	$ 1.94
Cash and cash equivalents	$ 7,618	$ 5,055	$ 4,292	$11,204	$ 3,097
Total assets	$75,933	$67,493	$50,124	$54,418	$49,966
Debt and finance lease obligations	$41,062	$32,798	$17,493	$17,569	$13,642

(1) Our fiscal year ends on the Sunday closest to October 31 in a 52-week year and on the first Sunday in November in a 53-week year. Our fiscal year ended November 4, 2018 was a 53-week fiscal year. All other fiscal years presented included 52 weeks.

(2) During fiscal year 2019, we adopted ASU 2014-09, Revenue from Contracts with Customers ("Topic 606"). Periods prior to fiscal year 2019 were presented in accordance with Accounting Standards Codification 605, Revenue Recognition.

(3) In connection with our acquisitions of the Symantec Business and CA in fiscal years 2020 and 2019, amortization of acquisition-related intangible assets increased $1,008 million and $1,667 million, respectively. In connection with our acquisition of BRCM in the fiscal year ended October 30, 2016, our results included $1,185 million of purchase accounting effect on inventory.

(4) Our income from continuing operations and income per share from continuing operations in fiscal year 2018 were significantly impacted by the benefit from income taxes as a result of the enactment of the 2017 Tax Reform Act and our redomiciliation to the United States in fiscal year 2018.

ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Management’s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with “Selected Financial Data” and our consolidated financial statements and notes thereto which appear elsewhere in this Annual Report on Form 10-K. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under the caption “Risk Factors” or in other parts of this Annual Report on Form 10-K.

Overview

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Our infrastructure software solutions enable customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. We offer a cyber security solutions portfolio, including endpoint, network, information and identity security solutions. We also offer mission critical fibre channel storage area networking (“FC SAN”) products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products.

During the first quarter of our fiscal year ended November 1, 2020 (“fiscal year 2020”), we changed our organizational structure, resulting in two reportable segments: semiconductor solutions and infrastructure software. In addition, during the fourth quarter of our fiscal year 2020, we refined our allocation methodology for certain selling, general and administrative expenses to more closely align these costs with the segment benefiting from the shared expenses. Prior period segment results have been recast to conform to the current presentation.

Our strategy is to combine best-of-breed technology leadership in semiconductor and infrastructure software solutions, with unmatched scale, on a common sales and administrative platform to deliver a comprehensive suite of infrastructure technology products to the world’s leading business and government customers. We seek to achieve this through responsibly financed acquisitions of category-leading businesses and technologies, as well as investing extensively in research and development, to ensure our products retain their technology leadership. This strategy results in a robust business model designed to drive diversified and sustainable operating and financial results.

The demand for our products has been affected in the past, and is likely to continue to be affected in the future, by various factors, including the following:

- gain or loss of significant customers;
- general economic and market conditions in the industries and markets in which we compete;
- our distributors’ product inventory and end customer demand;
- the rate at which our present and future customers and end-users adopt our products and technologies in our target markets, and the rate at which our customers' products that include our technology are accepted in their markets;

- the shift to cloud-based IT solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers; and
- the timing, rescheduling or cancellation of expected customer orders.

Our fiscal year 2020 and our fiscal year ended November 3, 2019 (“fiscal year 2019”) were 52-week fiscal years compared to our fiscal year ended November 4, 2018 (“fiscal year 2018”), which was a 53-week fiscal year.

COVID-19 Update

In response to the ongoing COVID-19 pandemic and the various resulting government directives, we have taken extensive measures to protect the health and safety of our employees and contractors at our facilities. We modified our workplace practices globally, which resulted in most of our employees working remotely for an extended periods of time. While we have implemented a phased-in return of employees to many of our facilities, if the spread of COVID-19 worsens significantly, we may need to further limit onsite operations or otherwise modify our business practices. We continue to monitor the implications of the COVID-19 pandemic on our business, as well as our customers’ and suppliers’ businesses.

The demand environment for our semiconductor products was consistent with our expectations for our fourth quarter of fiscal year 2020, with continued demand for products and infrastructure to support a dramatic increase around the world in remote or tele-work and learning due to COVID-19. While we continue to see robust demand in this area, the macroeconomic environment remains uncertain and it may not be sustainable over the longer term. To date, the impact of COVID-19 on the demand environment for our software products has been limited. On the product supply side, we continue to experience various constraints in our supply chain due to the pandemic, including with respect to wafers and substrates. As a result, supply lead times are still extended and we continue to have difficulties in obtaining some necessary components and inputs in a timely manner. However, the disruptions in our outsourced assembly and test capacity that we experienced previously, as a result of COVID-19 related shutdowns, have now largely resolved.

We have also taken various actions to de-risk our business in light of the ongoing uncertainty. For example, we are largely building semiconductor products to order, instead of based on customer forecasts. In addition, during the fourth fiscal quarter, we continued to strengthen our balance sheet, including closely managing working capital and reducing our total debt outstanding.

Overall, in light of the changing nature and continuing uncertainty around the COVID-19 pandemic, our ability to predict the impact of COVID-19 on our business in future periods remains limited. The effects of the pandemic on our business are unlikely to be fully realized, or reflected in our financial results, until future periods.

Fiscal Year Highlights

Highlights during fiscal year 2020 include the following:

- We acquired the Symantec Corporation Enterprise Security business (the "Symantec Business").
- We generated $12,061 million of cash from operations.
- We paid $5,534 million in cash dividends.

Acquisitions and Divestitures

The discussion and analysis in this section and the accompanying consolidated financial statements include the results of operations of acquired companies commencing on their respective acquisition dates.

Acquisition of Symantec Corporation's Enterprise Security Business

On November 4, 2019, we completed the purchase and assumption of certain assets and certain liabilities, respectively, of the Symantec Business for $10.7 billion in cash (the "Symantec Asset Purchase"). We financed this acquisition with the net proceeds from the borrowings under the November 2019 Term Loans, as defined in Note 10. "Borrowings" included in Part II, Item 8 of this Annual Report on Form 10-K.

Acquisition of CA, Inc.

On November 5, 2018, we acquired CA, Inc. ("CA") for $18.8 billion in aggregate cash purchase consideration and assumed $2.25 billion of outstanding unsecured bonds (the "CA Merger"). We financed the CA Merger with $18 billion of term loans, as well as cash on hand of the combined companies. We also assumed all eligible unvested CA equity awards in the transaction. On December 31, 2018, we sold Veracode, Inc. ("Veracode"), a subsidiary of CA and provider of application security testing solutions, to Thoma Bravo, LLC for cash consideration of $950 million, before working capital adjustments.

Acquisition of Brocade Communications Systems, Inc.

On November 17, 2017, we acquired Brocade Communications Systems, Inc. ("Brocade") for $6.0 billion in cash, including retirement of their term loan debt, which we financed using the net proceeds from the issuance of our senior unsecured notes, issued in October 2017, as well as cash on hand. We also assumed all eligible unvested Brocade equity awards in the transaction. On December 1, 2017, we sold certain Brocade business for an aggregate of $800 million in cash.

Net Revenue

A majority of our net revenue is derived from sales of a broad range of semiconductor devices that are incorporated into electronic products, as well as from modules, switches and subsystems. Net revenue is also generated from the sale of software solutions that enable our customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms.

Our overall net revenue, as well as the percentage of total net revenue generated by sales in our semiconductor solutions and infrastructure software segments, has varied from quarter to quarter, due largely to fluctuations in end-market demand, including the effects of seasonality, which are discussed in detail in Part I, Item 1. *Business* under "Seasonality" of this Annual Report on Form 10-K.

Original equipment manufacturers ("OEMs"), or their contract manufacturers, and distributors typically account for the substantial majority of our semiconductor sales. To serve customers around the world, we have strategically developed relationships with large global electronic component distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges. We also sell our products to a wide variety of OEMs or their contract manufacturers. We have established strong relationships with leading OEM customers across multiple target markets. Our direct sales force focuses on supporting our large OEM customers and has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer's organization. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers. Many of our major customer relationships have been in place for many years and are often the result of years of collaborative product development. This has enabled us to build our extensive intellectual property ("IP") portfolio and develop critical expertise regarding our customers' requirements, including substantial system-level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. We recognize revenue upon delivery of product to the distributors, which can cause our quarterly net revenue to fluctuate significantly. Such revenue is reduced for estimated returns and distributor allowances.

Our traditional software customers generally consist of large enterprises that have computing environments from multiple vendors and are highly complex. We believe our enterprise-wide license model will continue to offer our customers reduced complexity, more flexibility and an easier renewal process that will help drive revenue growth.

Costs and Expenses

Cost of products sold. Cost of products sold consists primarily of the costs for semiconductor wafers and other materials, as well as the costs of assembling and testing those products and materials. Such costs include personnel and overhead related to our manufacturing operations, which include stock-based compensation expense; related occupancy; computer services; equipment costs; manufacturing quality; order fulfillment; warranty adjustments; inventory adjustments, including write-downs for inventory obsolescence; and acquisition costs, which include direct transaction costs and acquisition-related costs.

Although we outsource a significant portion of our manufacturing activities, we do have some proprietary semiconductor fabrication facilities. If we are unable to utilize our owned fabrication facilities at a desired level, the fixed costs associated with these facilities will not be fully absorbed, resulting in higher average unit costs and lower gross margins.

Cost of subscriptions and services. Cost of subscriptions and services consists of personnel, project costs associated with professional services or support of our subscriptions and services revenue, and allocated facilities costs and other corporate expenses. Personnel costs include stock-based compensation expense.

Total cost of revenue also includes the purchase accounting effect on inventory, amortization of acquisition-related intangible assets and restructuring charges.

Research and development. Research and development expense consists primarily of personnel costs for our engineers engaged in the design and development of our products and technologies, including stock-based compensation expense. These expenses also include project material costs, third-party fees paid to consultants, prototype development expense, allocated facilities costs and other corporate expenses and computer services costs related to supporting computer tools used in the engineering and design process.

Selling, general and administrative. Selling expense consists primarily of compensation and associated costs for sales and marketing personnel, including stock-based compensation expense, sales commissions paid to our independent sales representatives, advertising costs, trade shows, corporate marketing, promotion, travel related to our sales and marketing operations, related occupancy and equipment costs, and other marketing costs. General and administrative expense consists primarily of compensation and associated costs for executive management, finance, human resources and other administrative personnel, including stock-based compensation expense, outside professional fees, allocated facilities costs, acquisition-related costs and other corporate expenses.

Amortization of acquisition-related intangible assets. In connection with our acquisitions, we recognize intangible assets that are being amortized over their estimated useful lives. We also recognize goodwill, which is not amortized, and in-process research and development ("IPR&D"), which is initially capitalized as an indefinite-lived intangible asset, in connection with the acquisitions. Upon completion of each underlying project, IPR&D assets are reclassified as amortizable purchased intangible assets and amortized over their estimated useful lives.

Restructuring, impairment and disposal charges. Restructuring, impairment and disposal charges consist primarily of compensation costs associated with employee exit programs, alignment of our global manufacturing operations, rationalizing product development program costs, facility and lease abandonments, fixed asset impairment, IPR&D impairment, and other exit costs, including curtailment of service or supply agreements.

Interest expense. Interest expense includes coupon interest, commitment fees, accretion of original issue discount, amortization of debt premiums and debt issuance costs, and expenses related to debt modifications or extinguishments.

Other income, net. Other income, net includes interest income, gains or losses on investments, foreign currency remeasurement, and other miscellaneous items.

Provision for (benefit from) income taxes. We have structured our operations to maximize the benefit from tax incentives extended to us in various jurisdictions to encourage investment or employment. Our tax incentives from the Singapore Economic Development Board provide that any qualifying income earned in Singapore is subject to tax incentives or reduced rates of Singapore income tax. Subject to our compliance with the conditions specified in these incentives and legislative developments, these Singapore tax incentives are presently expected to expire in November 2025. The corporate income tax rate in Singapore that would otherwise apply to us would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028.

Each tax incentive and tax holiday is also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with any such operating conditions specified, we could, in some instances, be required to refund previously realized material tax benefits, or if such tax incentive or tax holiday is terminated prior to its expiration absent a new incentive applying, we will lose the related tax benefits earlier than scheduled. We may elect to modify our operational structure and tax strategy, which may not be as beneficial to us as the benefits provided under the present tax concession arrangements. Before taking into consideration the effects of the U.S. Tax Cuts and Jobs Act ("2017 Tax Reform Act") and other indirect tax impacts, the effect of these tax incentives and tax holiday was to increase the benefit from income taxes by approximately $833 million, $923 million and $590 million for fiscal years 2020, 2019 and 2018, respectively.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows. In addition, taxable income in any jurisdiction is dependent upon acceptance of our operational practices and intercompany transfer pricing by local tax authorities as being on an arm's length basis. Due to inconsistencies in application of the arm's length standard among taxing authorities, as well as lack of adequate treaty-based protection, transfer pricing challenges by tax authorities could, if successful, substantially increase our income tax expense.

The 2017 Tax Reform Act made significant changes to the U.S. Internal Revenue Code, including (1) a decrease in the U.S. corporate tax rate from 35% to 21% effective for tax years beginning after December 31, 2017, (2) the accrual of U.S. income tax on foreign earnings when earned, allowing certain foreign dividends to then be tax-exempt, rather than deferring such income tax payments until the foreign earnings are repatriated into the U.S., and (3) the transition tax on the mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations (the "Transition Tax"). Following the enactment of the 2017 Tax Reform Act, the Securities and Exchange Commission ("SEC"), issued guidance for situations when there is insufficient information to complete the accounting for certain income tax effects of the 2017 Tax Reform Act. Based on our interpretation of the 2017 Tax Reform Act and the SEC's guidance, we recognized an income tax benefit of $7,278 million during fiscal year 2018. During fiscal year 2019 we recorded an income tax provision of $113 million from a change in estimate of our fiscal year 2018 benefit as a result of proposed U.S. Treasury regulations issued in fiscal year 2019 related to the 2017 Tax Reform Act. We also recognized an income tax benefit of $1,162 million in fiscal year 2018 primarily as a result of our redomiciliation to the United States in April 2018.

Critical Accounting Estimates

The preparation of financial statements in accordance with generally accepted accounting principles in the United States ("GAAP") requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. We base our estimates and assumptions on current facts, historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the accrual of costs and expenses that are not readily apparent from other sources. Our actual financial results may differ materially and adversely from our estimates. Our critical accounting policies are those that affect our historical financial statements materially and involve difficult, subjective or complex judgments by management. Those policies include revenue recognition, business combinations, valuation of long-lived assets, intangible assets and goodwill, inventory valuation, income taxes, retirement and post-retirement benefit plan assumptions, stock-based compensation and employee bonus programs. See Note 2. "Summary of Significant Accounting Policies" included in Part II, Item 8. of this Annual Report on Form 10-K for further information on our critical accounting policies and estimates.

Revenue recognition. We account for a contract with a customer when both parties have approved the contract and are committed to perform their respective obligations, each party's rights can be identified, payment terms can be identified, the contract has commercial substance, and it is probable we will collect substantially all of the consideration we are entitled to. Revenue is recognized when, or as, performance obligations are satisfied by transferring control of a promised product or service to a customer. Our products and services can be broadly categorized as sales of products and subscriptions and services.

We recognize products revenue from sales to direct customers and distributors when control transfers to the customer. An allowance for distributor credits covering price adjustments is made based on our estimate of historical experience rates as well as considering economic conditions and contractual terms. To date, actual distributor claims activity has been materially consistent with the provisions we have made based on our historical estimates. However, because of the inherent nature of estimates, there is always a risk that there could be significant differences between actual amounts and our estimates. Different judgments or estimates could result in variances that might be significant to reported operating results. We also record reductions of revenue for rebates in the same period that the related revenue is recorded. We accrue 100% of potential rebates at the time of sale. We reverse the accrual of unclaimed rebate amounts as specific rebate programs contractually end and when we believe unclaimed rebates are no longer subject to payment and will not be paid. Thus, the reversal of unclaimed rebates may have a positive impact on our net revenue and net income in subsequent periods.

Our contracts may contain more than one of our products and services, each of which is separately accounted for as a distinct performance obligation. When available, we use directly observable transactions to determine the standalone selling prices for performance obligations. Our estimates of standalone selling price for each performance obligation require judgment that considers multiple factors, including, but not limited to, historical discounting trends for products and services and pricing practices through different sales channels, gross margin objectives, internal costs, competitor pricing strategies, technology lifecycles and market conditions.

We also estimate the standalone selling price of our material rights. Our estimate of the value of the customer's option to purchase or receive additional products or services at a discounted price includes estimating the incremental discount the customer would obtain when exercising the option and the likelihood that the option would be exercised.

Certain contracts contain a right of return that allows the customer to cancel all or a portion of the product or service and receive a credit. We estimate returns based on historical returns data which is constrained to an amount for which a material revenue reversal is not probable. We do not recognize revenue for products or services that are expected to be returned.

Business combinations. Accounting for business combinations requires management to make significant estimates and assumptions, especially at the acquisition date, for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain of the intangible assets we have acquired include, but are not limited to, future expected cash flows from product sales, customer contracts and acquired technologies, revenue growth rate, customer ramp-up period, technology obsolescence rates, expected costs to develop IPR&D into commercially viable products, estimated cash flows from the projects when completed, and discount rates. The discount rates used to discount expected future cash flows to present value are typically derived from a weighted-average cost of capital analysis and adjusted to reflect inherent risks. Unanticipated events and circumstances may occur that could affect either the accuracy or validity of such assumptions, estimates or actual results.

Valuation of goodwill and long-lived assets. We perform an annual impairment review of our goodwill during the fourth fiscal quarter of each year, and more frequently if we believe indicators of impairment exist. The process of evaluating the potential impairment of goodwill is highly subjective and requires significant judgment. To review for impairment, we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. These factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit’s net book value.

Determining the fair value of a reporting unit involves the use of significant estimates and assumptions. Our goodwill impairment test uses both the income approach and the market approach to estimate a reporting unit's fair value. The income approach is based on the discounted cash flow method that uses the reporting unit estimates for forecasted future financial performance including revenues, operating expenses, and taxes, as well as working capital and capital asset requirements. These estimates are developed as part of our long-term planning process based on assumed market segment growth rates and our assumed market segment share, estimated costs based on historical data and various internal estimates. Projected cash flows are then discounted to a present value employing a discount rate that properly accounts for the estimated market weighted-average cost of capital, as well as any risk unique to the subject cash flows. The market approach is based on weighting financial multiples of comparable companies and applies a control premium. A reporting unit's carrying value represents the assignment of various assets and liabilities, excluding certain corporate assets and liabilities, such as cash and debt.

We assess the impairment of long-lived assets including purchased IPR&D, property, plant and equipment, and intangible assets, whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, or (iii) significant negative industry or economic trends. The process of evaluating the potential impairment of long-lived assets under the accounting guidance on property, plant and equipment and other intangible assets is also highly subjective and requires significant judgment. In order to estimate the fair value of long-lived assets, we typically make various assumptions about the future prospects of our business or the part of our business that the long-lived asset relates to. We also consider market factors specific to the business and estimate future cash flows to be generated by the business, which requires significant judgment as it is based on assumptions about market demand for our products over a number of future years. Based on these assumptions and estimates, we determine whether we need to take an impairment charge to reduce the value of the long-lived asset stated on our consolidated balance sheets to reflect its estimated fair value. Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors, such as the real estate market, industry and economic trends, and internal factors, such as changes in our business strategy and our internal forecasts. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, changes in assumptions and estimates could materially impact our reported financial results.

Inventory valuation. We regularly review inventory quantities on hand and record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. Demand for our products can fluctuate significantly from period to period. A significant decrease in demand could result in an increase in the amount of excess inventory quantities on hand. In addition, our industry is characterized by rapid technological change, frequent new product development and rapid product obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Additionally, our estimates of future product demand may prove to be inaccurate, which may cause us to understate or overstate both the provision required for excess and obsolete inventory and cost of products sold. Therefore, although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our results of operations.

Income taxes. Significant management judgment is required in developing our provision for or benefit from income taxes, including the determination of deferred tax assets and liabilities and any valuation allowances that might be required against the deferred tax assets. We have considered projected future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for valuation allowances. If we determine that a valuation allowance is required, such adjustment to the deferred tax assets would increase our tax expense in the period in which such determination is made. Conversely, if we determine that a valuation allowance exceeds our requirement, such adjustment to the deferred tax assets would decrease tax expense in the period in which such determination is made. In evaluating the exposure associated with various tax filing positions, we accrue an income tax liability when such positions do not meet the more likely than not threshold for recognition.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax law and regulations in a multitude of jurisdictions. We recognize potential liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on our estimate of whether, and the extent to which, additional taxes, interest, and penalties will be due. If our estimate of income tax liabilities proves to be less than the actual amount ultimately assessed, a further charge to tax expense would be required. If the payment of these amounts ultimately proves to be unnecessary, the reversal of the accrued liabilities would result in tax benefits being recognized in the period when we determine the liabilities no longer exist.

Retirement and post-retirement benefit plan assumptions. Retirement and post-retirement benefit plan costs represent obligations that will ultimately be settled sometime in the future and therefore, are subject to estimation. Pension accounting is intended to reflect the recognition of future retirement and post-retirement benefit plan costs over the employees' average expected future service to us, based on the terms of the plans and investment and funding decisions. To estimate the impact of these future payments and our decisions concerning funding of these obligations, we are required to make assumptions using actuarial concepts within the framework of GAAP. One assumption is the discount rate used to calculate the estimated costs. Other assumptions include the expected long-term return on plan assets, expected future salary increases, the health care cost trend rate, expected future increases to benefit payments, expected retirement dates, employee turnover, retiree mortality rates, and portfolio composition. We evaluate these assumptions at least annually.

For our U.S. and non-U.S. plans, we use October 31, the month end closest to our fiscal year end, as the annual discount rate measurement date to determine the present value of future benefit payments. The U.S. discount rates are based on the results of matching expected plan benefit payments with cash flows from a hypothetical yield curve constructed with high-quality corporate bond yields. The discount rate for non-U.S. plans was based either on published rates for government bonds or use of a hypothetical yield curve constructed with high-quality corporate bond yields, depending on the availability of sufficient quantities of quality corporate bonds. Lower discount rates increase present values of the pension liabilities and subsequent year pension expense; higher discount rates decrease present values of the pension liabilities and subsequent year pension expense.

The U. S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy.

Actuarial assumptions are based on our best estimates and judgment. Material changes may occur in retirement benefit costs in the future if these assumptions differ from actual events or experiences. We performed a sensitivity analysis on the discount rate, which is the key assumption in calculating the U.S. pension and post-retirement benefit obligations. Each change of 25 basis points in the discount rate assumption would have had an estimated $40 million impact on the benefit obligations as of the fiscal year 2020 measurement date. Each change of 25 basis points in the discount rate assumption or expected rate of return assumption would not have a material impact on annual net retirement benefit costs for the fiscal year ending October 31, 2021 ("fiscal year 2021").

Stock-based compensation expense. Stock-based compensation expense consists of expense for restricted stock units ("RSUs") and stock options granted to employees and non-employees or assumed from acquisitions as well as expense associated with Broadcom employee stock purchase plan ("ESPP"). We recognize compensation expense for time-based stock options and ESPP rights based on the estimated grant-date fair value method required under the authoritative guidance using the Black-Scholes valuation model.

Certain equity awards include both time-based and market-based conditions and are accounted for as market-based awards. The fair value of these market-based awards is estimated on the date of grant using a Monte Carlo simulation model.

Employee Bonus Programs. Our employee bonus programs, which are overseen by our Compensation Committee, or our Board, in the case of our Chief Executive Officer, provide for variable compensation based on the attainment of overall corporate annual targets and functional performance metrics. In the first fiscal quarter of the year, if management determines that it is probable that the targets and metrics will be achieved and the amounts can be reasonably estimated, a variable, proportional compensation accrual is recognized based on an assumed 100% achievement of the targets and metrics. The bonus payout levels can be greater if attainment of metrics and targets is greater than 100% and a portion of the payouts may not occur if a minimum floor of performance is not achieved. In subsequent quarters, we monitor and accrue for variable compensation expense based on our actual progress toward the achievement of the annual targets and metrics. The actual achievement of target metrics at the end of the fiscal year, which is subject to approval by our Compensation Committee, may result in the actual variable compensation amounts being significantly higher or lower than the relevant estimated amounts accrued in earlier quarters, which would result in a corresponding adjustment in the fourth fiscal quarter.

Fiscal Year Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal years 2020 and 2019 consisted of 52 weeks. Fiscal year 2018 consisted of 53 weeks.

The financial statements included in Part II, Item 8. of this Annual Report on Form 10-K are presented in accordance with GAAP and expressed in U.S. dollars.

Table of Contents

Results of Operations

Fiscal Year 2020 Compared to Fiscal Year 2019

The following table sets forth our results of operations for the periods presented:

	Fiscal Year Ended			
	November 1, 2020	November 3, 2019	November 1, 2020	November 3, 2019
	(In millions)		(As a percentage of net revenue)	
Statements of Operations Data:				
Net revenue:				
Products	$ 17,435	$ 18,117	73 %	80 %
Subscriptions and services	6,453	4,480	27	20
Total net revenue	23,888	22,597	100	100
Cost of revenue:				
Cost of products sold	5,892	6,208	25	28
Cost of subscriptions and services	626	515	2	2
Amortization of acquisition-related intangible assets	3,819	3,314	16	15
Restructuring charges	35	77	—	—
Total cost of revenue	10,372	10,114	43	45
Gross margin	13,516	12,483	57	55
Research and development	4,968	4,696	21	21
Selling, general and administrative	1,935	1,709	8	8
Amortization of acquisition-related intangible assets	2,401	1,898	10	8
Restructuring, impairment and disposal charges	198	736	1	3
Total operating expenses	9,502	9,039	40	40
Operating income	$ 4,014	$ 3,444	17 %	15 %

Net Revenue

Historically, a relatively small number of customers has accounted for a significant portion of our net revenue. Sales of products to distributors accounted for 42% and 46% of our net revenue for fiscal years 2020 and 2019, respectively. Direct sales to WT Microelectronics, a distributor, accounted for 13% and 17% of our net revenue for fiscal years 2020 and 2019, respectively. We believe our aggregate sales to our top five end customers through all channels accounted for more than 30% of our net revenue for each of our fiscal years 2020 and 2019. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 15% and 20% of our net revenue for fiscal years 2020 and 2019, respectively. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

From time to time, some of our key semiconductor customers place large orders or delay orders, causing our quarterly net revenue to fluctuate significantly. This is particularly true of our wireless products as fluctuations may be magnified by the timing of launches, and seasonal variations in sales, of mobile handsets. In addition, the ongoing COVID-19 pandemic and related challenges and uncertainties may also cause our net revenue to fluctuate significantly and adversely affect our results of operations, as discussed above.

Additionally, if export restrictions on one of our larger customers continue, revenue in future periods may continue to be adversely impacted.

Although we recognize revenue for the majority of our products when title and control transfer in Penang, Malaysia, we disclose net revenue by country based on the geographic shipment or delivery location specified by distributors, OEMs, contract manufacturers, channel partners, or software customers. In each of fiscal years 2020 and 2019, approximately 35% of our net revenue came from shipments or deliveries to China (including Hong Kong), compared to approximately 50% for fiscal year 2018. However, the end customers for either our products or for the end products into which our products are incorporated, are frequently located in countries other than China (including Hong Kong). As a result, we believe that a substantially smaller percentage of our net revenue is ultimately dependent on sales of either our product or our customers’ product incorporating our product, to end customers located in China (including Hong Kong).

The following tables set forth net revenue by segment for the periods presented:

Net Revenue by Segment	Fiscal Year Ended November 1, 2020	Fiscal Year Ended November 3, 2019	$ Change	% Change
	(In millions, except for percentages)			
Semiconductor solutions	$ 17,267	$ 17,441	$ (174)	(1)%
Infrastructure software	6,621	5,156	1,465	28 %
Total net revenue	$ 23,888	$ 22,597	$ 1,291	6 %

Net Revenue by Segment	Fiscal Year Ended November 1, 2020	Fiscal Year Ended November 3, 2019
	(As a percentage of net revenue)	
Semiconductor solutions	72 %	77 %
Infrastructure software	28	23
Total net revenue	100 %	100 %

Our total net revenue increased primarily due to contributions from the Symantec enterprise security solutions in fiscal year 2020 compared to the prior fiscal year. Net revenue from our semiconductor solutions segment decreased primarily due to delays in the production ramp of a new mobile handset by a major customer that resulted in lower than expected shipments in the year, partially offset by higher demand for our networking and storage products. Net revenue from our infrastructure software segment increased primarily due to contributions from our Symantec enterprise security solutions.

Gross Margin

Gross margin was $13,516 million, or 57% of net revenue, for fiscal year 2020, compared to $12,483 million, or 55% of our net revenue, for fiscal year 2019. The increase was primarily due to contributions from our Symantec enterprise security solutions, as well as favorable product mix within our semiconductor solutions segment, compared to the corresponding prior fiscal year.

Research and Development Expense

Research and development expense increased $272 million, or 6%, in fiscal year 2020, compared to the prior fiscal year. The increase was primarily due to our acquisition of the Symantec Business, partially offset by a decrease in stock-based compensation expense resulting from restructuring actions.

Selling, General and Administrative Expense

Selling, general and administrative expense increased $226 million, or 13%, in fiscal year 2020, compared to the prior fiscal year. The increase was primarily due to our acquisition of the Symantec Business and associated acquisition-related costs, partially offset by a decrease in compensation expense, including stock-based compensation, resulting from restructuring actions.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets recognized in operating expenses increased $503 million, or 27%, in fiscal year 2020, compared to the prior fiscal year. The increase was primarily due to the addition of amortization of intangible assets as a result of our acquisition of the Symantec Business.

Restructuring, Impairment and Disposal Charges

Restructuring, impairment and disposal charges included in operating expenses decreased $538 million, or 73%, in fiscal year 2020, compared to the prior fiscal year. The decrease was primarily due to higher employee termination costs, as well as lease and other exit costs resulting from the CA Merger, in the prior fiscal year.

Segment Operating Results

Operating Income (Loss)	Fiscal Year Ended November 1, 2020	November 3, 2019	$ Change	% Change
	(In millions, except for percentages)			
Semiconductor solutions	$ 8,576	$ 8,538	$ 38	— %
Infrastructure software	4,363	3,391	972	29 %
Unallocated expenses	(8,925)	(8,485)	(440)	5 %
Total operating income	$ 4,014	$ 3,444	$ 570	17 %

Operating income from our semiconductor solutions segment increased slightly, primarily due to higher demand for storage products, largely offset by delays in the production ramp of a new mobile handset by a major customer, which resulted in lower than expected shipments in the year. Operating income from our infrastructure software segment increased primarily due to contributions from our Symantec enterprise security solutions.

Unallocated expenses include amortization of acquisition-related intangible assets; stock-based compensation expense; acquisition-related costs; restructuring, impairment and disposal charges; and other costs that are not used in evaluating the results of, or in allocating resources to, our segments. Unallocated expenses increased 5% in fiscal year 2020, compared to the prior year fiscal period, primarily due to higher amortization of acquisition-related intangible assets and acquisition-related costs, partially offset by lower restructuring, impairment and disposal charges and stock-based compensation expense.

Non-Operating Income and Expenses

Interest expense. Interest expense was $1,777 million and $1,444 million for fiscal years 2020 and 2019, respectively. The increase was primarily due to the increase in debt associated with the financing of our acquisition of the Symantec Business, as well as losses on extinguishment of debt related to refinancing activities during fiscal year 2020.

Other income, net. Other income, net, which includes interest income, gains or losses on investments, foreign currency remeasurement and other miscellaneous items, was $206 million and $226 million for fiscal years 2020 and 2019, respectively. The decrease was primarily due to lower gains on investments, partially offset by a $116 million one-time gain from the lapse of a tax indemnification arrangement.

Benefit from income taxes. Benefit from income taxes was $518 million and $510 million for fiscal years 2020 and 2019, respectively. The benefit from income taxes in fiscal year 2020 was primarily due to the jurisdictional mix of income and expense, the recognition of gross uncertain tax benefits as a result of lapses of statues of limitations, the remeasurement of certain foreign deferred tax assets and liabilities, and excess benefit from stock-based awards. The benefit from income taxes in fiscal year 2019 was primarily due to excess tax benefits from stock-based awards, the recognition of gross uncertain tax benefits as a result of audit settlements and lapses of statutes of limitations, deferred tax remeasurement in state and foreign jurisdictions, internal reorganizations, and the partial release of our valuation allowance as a result of the CA Merger. This was partially offset by a change in estimate of our fiscal year 2018 provision resulting from regulations issued related to the 2017 Tax Reform Act.

Table of Contents

Fiscal Year 2019 Compared to Fiscal Year 2018

The following table sets forth our results of operations for the periods presented:

Statements of Operations Data:	**Fiscal Year Ended**			
	November 3, 2019	**November 4, 2018**	**November 3, 2019**	**November 4, 2018**
	(In millions)		**(As a percentage of net revenue)**	
Net revenue:				
Products	$ 18,117	$ 19,754	80 %	95 %
Subscriptions and services	4,480	1,094	20	5
Total net revenue	22,597	20,848	100	100
Cost of revenue:				
Cost of products sold	6,208	6,924	28	33
Cost of subscriptions and services	515	97	2	1
Purchase accounting effect on inventory	—	70	—	—
Amortization of acquisition-related intangible assets	3,314	3,004	15	14
Restructuring charges	77	20	—	—
Total cost of revenue	10,114	10,115	45	48
Gross margin	12,483	10,733	55	52
Research and development	4,696	3,768	21	18
Selling, general and administrative	1,709	1,056	8	5
Amortization of acquisition-related intangible assets	1,898	541	8	3
Restructuring, impairment and disposal charges	736	219	3	1
Litigation settlements	—	14	—	—
Total operating expenses	9,039	5,598	40	27
Operating income	$ 3,444	$ 5,135	15 %	25 %

The following tables set forth net revenue by segment for the periods presented:

Net Revenue

Net Revenue by Segment	**Fiscal Year Ended**			
	November 3, 2019	**November 4, 2018**	**$ Change**	**% Change**
	(In millions, except for percentages)			
Semiconductor solutions	$ 17,441	$ 19,068	$ (1,627)	(9)%
Infrastructure software	5,156	1,780	3,376	190 %
Total net revenue	$ 22,597	$ 20,848	$ 1,749	8 %

Net Revenue by Segment	Fiscal Year Ended November 3, 2019	November 4, 2018
	(As a percentage of net revenue)	
Semiconductor solutions	77 %	92 %
Infrastructure software	23	8
Total net revenue	100 %	100 %

Our total net revenue increased primarily due to the CA Merger in fiscal year 2019. Net revenue from our semiconductor solutions segment decreased due to lower demand for our wireless content in mobile handsets, as well as lower demand for our broadband, optocoupler, set-top box and server storage connectivity products. Fiscal year 2018 semiconductor solutions revenue benefited from a later than typical new mobile handset ramp with a major customer in the first quarter, which resulted in higher shipments in that quarter, as well as an extra week in the fiscal year as compared to fiscal year 2019. Net revenue from our infrastructure software segment increased primarily due to contributions from our mainframe and enterprise software solutions.

Gross Margin

Gross margin was $12,483 million, or 55% of net revenue, for fiscal year 2019 compared to $10,733 million, or 52% of net revenue, for fiscal year 2018. The increase in gross margin was primarily due to contributions from our mainframe and enterprise software solutions and favorable product mix within our semiconductor solutions segment, compared to the prior fiscal year, partially offset by higher amortization of acquisition-related intangible assets and restructuring charges as a result of the CA Merger and higher stock-based compensation expense.

Research and Development Expense

Research and development expense increased $928 million, or 25%, in fiscal year 2019, compared to the prior fiscal year. Research and development expense as a percentage of net revenue was 21% and 18% for fiscal years 2019 and 2018, respectively. The increase was primarily due to the CA Merger and higher stock-based compensation expense, offset by lower variable employee compensation expense. Stock-based compensation expense increased primarily due to the issuance of the multi-year equity grants of time- and market-based RSUs (the "Multi-Year Equity Awards") in the first quarter of fiscal year 2019, the impact of the change from annual to quarterly vesting of equity awards and the assumed CA equity awards. Our stock-based compensation expense for fiscal year 2019 included employee equity awards granted at higher grant-date fair values than those granted in prior years, which also contributed to the increase.

Selling, General and Administrative Expense

Selling, general and administrative expense increased $653 million, or 62%, in fiscal year 2019, compared to the prior fiscal year. Selling, general and administrative expense as a percentage of net revenue was 8% and 5% for fiscal years 2019 and 2018, respectively. The increase was primarily due to the CA Merger and higher stock-based compensation expense. Stock-based compensation expense increased primarily due to the issuance of the Multi-Year Equity Awards, the impact of the change from annual to quarterly vesting of equity awards and the assumed CA equity awards.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets recognized in operating expenses increased $1,357 million, or 251%, in fiscal year 2019, compared to the prior fiscal year. The increase was primarily due to the addition of amortization of intangible assets acquired in the CA Merger.

Restructuring, Impairment and Disposal Charges

Restructuring, impairment and disposal charges included in operating expenses increased $517 million, or 236%, in fiscal year 2019, compared to the prior fiscal year. The increase was primarily due to employee termination costs, as well as lease and other exit costs resulting from the CA Merger.

Segment Operating Results

Operating Income by Segment	Fiscal Year Ended November 3, 2019	Fiscal Year Ended November 4, 2018	$ Change	% Change
	(In millions, except for percentages)			
Semiconductor solutions	$ 8,538	$ 9,253	$ (715)	(8)%
Infrastructure software	3,391	1,157	2,234	193 %
Unallocated expenses	(8,485)	(5,275)	(3,210)	61 %
Total operating income	$ 3,444	$ 5,135	$ (1,691)	(33)%

Operating income from our semiconductor solutions segment decreased primarily due to lower demand for our wireless content in mobile handsets, as well as lower demand for our optocoupler, broadband, server storage connectivity and set-top box products. Fiscal year 2018 semiconductor solutions operating income benefited from a later than typical new mobile handset ramp with a major customer in the first quarter, which resulted in higher shipments in that quarter, as well as an extra week in the fiscal year as compared to fiscal year 2019. Operating income from our infrastructure software segment increased primarily due to contributions from our mainframe and enterprise software solutions.

Unallocated expenses include amortization of acquisition-related intangible assets; stock-based compensation expense; acquisition-related costs; restructuring, impairment and disposal charges; and other costs that are not used in evaluating the results of, or in allocating resources to, our segments. Unallocated expenses increased 61% in fiscal year 2019, compared to the prior fiscal year, primarily due to higher amortization of acquisition-related intangible assets, stock-based compensation expense, and restructuring, impairment and disposal charges primarily related to the CA Merger.

Non-Operating Income and Expenses

Interest expense. Interest expense was $1,444 million and $628 million for fiscal years 2019 and 2018, respectively. Interest expense was higher in fiscal year 2019 primarily due to interest on the debt we incurred to finance the CA Merger in the first quarter of fiscal year 2019.

Other income, net. Other income, net was $226 million and $144 million in fiscal years 2019 and 2018, respectively. The increase was primarily due to an increase in unrealized gains on investments partially offset by losses on foreign currency remeasurement.

Benefit from income taxes. Benefit from income taxes was $510 million and $8,084 million for fiscal years 2019 and 2018, respectively. The benefit from income taxes in fiscal year 2019 was primarily due to excess benefit from stock-based awards, the recognition of gross unrecognized tax benefits as a result of audit settlements and lapses of statutes of limitations net of increases in balances related to tax positions taken during the current year, benefit from deferred tax measurement in state and foreign jurisdictions, benefit related to internal reorganizations, and benefit from the partial release of our valuation allowance as a result of the CA Merger, partially offset from a change in estimate of our fiscal year 2018 provision resulting from regulations issued related to the 2017 Tax Reform Act. The benefit from income taxes in fiscal year 2018 was primarily due to income tax benefits recognized from the enactment of the 2017 Tax Reform Act and as a result of our redomiciliation to the United States on April 4, 2018.

Liquidity and Capital Resources

The following section discusses our principal liquidity and capital resources as well as our primary liquidity requirements and uses of cash. Our cash and cash equivalents are maintained in highly liquid investments with remaining maturities of 90 days or less at the time of purchase. We believe our cash equivalents are liquid and accessible.

Our primary sources of liquidity as of November 1, 2020 consisted of: (i) $7,618 million in cash and cash equivalents, (ii) cash we expect to generate from operations and (iii) available capacity under our $5 billion unsecured revolving credit facility (the "Revolving Facility"). In addition, we may also generate cash from the sale of assets and debt or equity financing from time to time.

Our short-term and long-term liquidity requirements primarily arise from: (i) business acquisitions and investments we may make from time to time, (ii) working capital requirements, (iii) research and development and capital expenditure needs, (iv) cash dividend payments (if and when declared by our Board of Directors), (v) interest and principal payments related to our outstanding indebtedness and (vi) payment of income taxes. Our ability to fund these requirements will depend, in part, on our future cash flows, which are determined by our future operating performance and, therefore, subject to prevailing global macroeconomic conditions and financial, business and other factors, some of which are beyond our control.

We believe that our cash and cash equivalents on hand, cash flows from operations, and the Revolving Facility will provide sufficient liquidity to operate our business and fund our current and assumed obligations for at least the next 12 months. We expect a slight increase in capital expenditures in fiscal year 2021 as compared to fiscal year 2020.

From time to time, we engage in discussions with third parties regarding potential acquisitions of, or investments in, businesses, technologies and product lines. Any such transaction, or evaluation of potential transactions, could require significant use of our cash and cash equivalents, or require us to increase our borrowings to fund such transactions. If we do not have sufficient cash to fund our operations or finance growth opportunities, including acquisitions, or unanticipated capital expenditures, our business and financial condition could suffer. In such circumstances, we may seek to obtain new debt or equity financing. However, we cannot assure you that such additional financing will be available on terms acceptable to us or at all. Our ability to service our senior unsecured notes, outstanding term loans and any other indebtedness we may incur will depend on our ability to generate cash in the future. We may also elect to sell additional debt or equity securities for reasons other than those specified above.

In addition, we may, at any time and from time to time, seek to retire or purchase our outstanding debt through cash tenders and/or exchanges for equity or debt, in open-market purchases, privately negotiated transactions or otherwise. Such tenders, exchanges or purchases, if any, will be upon such terms and at such prices as we may determine, and will depend on prevailing market conditions, our liquidity requirements, contractual restrictions and other factors. The amounts involved may be material.

Working Capital

Working capital increased to $5,524 million at November 1, 2020 from $3,018 million at November 3, 2019. The increase was attributable to the following:

- Cash and cash equivalents increased to $7,618 million at November 1, 2020 from $5,055 million at November 3, 2019, primarily due to $27,802 million in proceeds from long-term borrowings, $12,061 million in net cash provided by operating activities, and $218 million in proceeds from the sales of businesses, partially offset by $20,099 million of debt repayments, $10,700 million paid for the Symantec Asset Purchase, $5,534 million of dividend payments and $765 million in payments of employee withholding taxes related to net share settled equity awards. See the "Cash Flows" section below for further details.
- Current portion of long-term debt decreased $1,960 million primarily due to repayment of certain debt, partially offset by additional amounts coming due within twelve months.
- Other current assets increased to $977 million at November 1, 2020 from $729 million at November 3, 2019, primarily due to increases in prepaid taxes and short-term investments.
- Inventory increased to $1,003 million at November 1, 2020 from $874 million at November 3, 2019, primarily due to timing of customer product ramps.

These increases in working capital were offset in part by the following:

- Other current liabilities increased to $3,831 million at November 1, 2020 from $2,616 million at November 3, 2019, primarily due to increases in contract liabilities, interest payable, taxes payable, and lease liabilities resulting from the adoption of Accounting Standard Codification Topic 842 ("Topic 842"), partially offset by repayments of notional pooling liabilities.
- Accounts receivable decreased to $2,297 million at November 1, 2020 from $3,259 million at November 3, 2019, primarily due to revenue linearity and additional receivables sold through factoring arrangements.
- Employee compensation and benefits increased to $877 million at November 1, 2020 from $641 million at November 3, 2019, primarily due to the employee bonus plan.

Working capital decreased to $3,018 million at November 3, 2019 from $6,769 million at November 4, 2018. The decrease was attributable to the following:

- Accounts receivable decreased to $3,259 million at November 3, 2019 from $3,325 million at November 4, 2018, primarily due to a higher volume of trade accounts receivable factoring, partially offset by higher revenue.
- Inventory decreased to $874 million at November 3, 2019 from $1,124 million at November 4, 2018, primarily due to our continued focus on inventory management.
- Current portion of long-term debt increased $2,787 million primarily due to certain unsecured senior notes becoming due within the next twelve months.
- Other current liabilities increased to $2,616 million at November 3, 2019 from $812 million at November 4, 2018, primarily due to the CA Merger and increases in contract liabilities from the adoption of Topic 606, notional pooling liabilities, restructuring reserves, taxes payable and interest payable.

These decreases in working capital were offset in part by the following:

- Cash and cash equivalents increased to $5,055 million at November 3, 2019 from $4,292 million at November 4, 2018 primarily due to $30,034 million in proceeds from long-term borrowings, $9,697 million in net cash provided by operating activities, $3,679 million of Mandatory Convertible Preferred Stock issuance proceeds and $957 million in proceeds from sale of Veracode, partially offset by $16,800 million of debt repayments, $16,027 million paid for the CA Merger, $5,435 million of common stock repurchases, $4,235 million of dividend payments, and $972 million in payments of employee withholding taxes related to net share settled equity awards. See the “Cash Flows” section below for further details.

- Other current assets increased to $729 million at November 3, 2019 from $366 million at November 4, 2018, primarily due to assets acquired in the CA Merger and increases in contract assets from adoption of Topic 606 and prepaid taxes.

Capital Returns

Cash Dividends and Distributions Declared and Paid	Fiscal Year Ended November 1, 2020	November 3, 2019	November 4, 2018
	(In millions, except per share/unit data)		
Dividends per share to common stockholders	$ 13.00	$ 10.60	$ 7.00
Dividends to common stockholders	$ 5,235	$ 4,235	$ 2,921
Dividends per share to preferred stockholders	$ 80.00	$ —	$ —
Dividends to preferred stockholders	$ 299	$ —	$ —
Distributions per unit to limited partners	$ —	$ —	$ 3.50
Distributions to limited partners	$ —	$ —	$ 77
Stock repurchases	$ —	$ 5,435	$ 7,258

During fiscal years 2020, 2019 and 2018, we paid approximately $765 million, $972 million and $56 million, respectively, in employee withholding taxes due upon the vesting of net settled equity awards. We withheld approximately 3 million, 4 million and 0.2 million shares of common stock from employees in connection with such net share settlements in fiscal years 2020, 2019 and 2018, respectively.

Pursuant to an $18 billion stock repurchase program previously authorized by our Board of Directors, we repurchased and retired approximately 21 million and 32 million shares of our common stock at a weighted average price of $258.52 and $227.60 during fiscal years 2019 and 2018, respectively. This authorization ended on November 3, 2019.

Cash Flows

	Fiscal Year Ended November 1, 2020	November 3, 2019	November 4, 2018
	(In millions)		
Net cash provided by operating activities	$ 12,061	$ 9,697	$ 8,880
Net cash used in investing activities	(11,109)	(15,422)	(4,674)
Net cash provided by (used in) financing activities	1,611	6,488	(11,118)
Net change in cash and cash equivalents	$ 2,563	$ 763	$ (6,912)

Operating Activities

Cash provided by operating activities consisted of net income adjusted for certain non-cash and other items and changes in assets and liabilities. The $2,364 million increase in cash provided by operations during fiscal year 2020 compared to fiscal year 2019 was due to higher cash flows from net income adjusted for non-cash items and changes in the operating assets and liabilities.

The $817 million increase in cash provided by operations during fiscal year 2019 compared to fiscal year 2018 was primarily due to changes in operating assets and liabilities. Cash flows from net income adjusted for non-cash items were relatively flat as higher net income in fiscal year 2018 reflected a significant non-cash income tax benefit, principally resulting from the enactment of the 2017 Tax Reform Act and the impact from our redomiciliation to the United States in fiscal year 2018.

Investing Activities

Cash flows from investing activities primarily consisted of cash used for acquisitions, capital expenditures and investments, and proceeds from sales of businesses and assets.

The $4,313 million decrease in cash used in investing activities for fiscal year 2020 compared to fiscal year 2019 was primarily related to a $5,161 million decrease in cash paid for acquisitions, partially offset by $739 million less in proceeds received from sales of businesses.

The $10,748 million increase in cash used in investing activities for fiscal year 2019 compared to fiscal year 2018 was primarily related to $16,027 million paid for the CA Merger in fiscal year 2019, partially offset by proceeds from sales of businesses as well as lower capital expenditures.

Financing Activities

Cash flows from financing activities primarily consisted of net proceeds and payments related to our long-term borrowings, dividend and distribution payments, stock repurchases and the issuances of stock. The $4,877 million decrease in cash provided by financing activities for fiscal year 2020 compared to fiscal year 2019 was primarily due to a $5,531 million decrease in net proceeds from borrowings as a result of debt repayments, the absence of preferred stock issuance which generated $3,679 million net proceeds in fiscal year 2019 and a $1,299 million increase in dividend payments, partially offset by the absence of repurchases of common stock under our repurchase program, which ended in fiscal year 2019, as compared to $5,435 million of repurchases in fiscal year 2019.

The $17,606 million increase in cash related to financing activities for fiscal year 2019 compared to fiscal year 2018 was primarily due to a $14,207 million increase in net proceeds from borrowings, net proceeds of $3,679 million from issuance of preferred stock and a $1,823 million decrease in common stock repurchases under our repurchase program, partially offset by a $1,237 million increase in dividend and distribution payments and a $916 million increase in employee withholding tax payments related to net settled equity awards.

Indebtedness

See Note 10. “Borrowings” included in Part II, Item 8. of this Annual Report on Form 10-K.

Summarized Obligor Group Financial Information

Pursuant to the indentures dated May 21, 2020, May 8, 2020, April 9, 2020, and April 5, 2019 (collectively, the “2020 and 2019 Indentures”), Broadcom issued $3,917 million, $8,000 million, $4,500 million, and $11,000 million aggregate principal amount of notes, respectively (collectively, the “2020 and 2019 Senior Notes”). Substantially all of the 2020 and 2019 Senior Notes have been registered with the SEC in connection with an exchange offer that completed on August 10, 2020.

We may redeem all or a portion of our 2020 and 2019 Senior Notes at any time prior to their maturity, subject to a specified make-whole premium as set forth in the indentures governing the respective notes. In the event of a change of control triggering event, holders of our 2020 and 2019 Senior Notes will have the right to require us to purchase for cash, all or a portion of their respective notes at a redemption price of 101% of the aggregate principal amount plus accrued and unpaid interest. The 2020 and 2019 Indentures also contain covenants that restrict, among other things, the ability of Broadcom and its subsidiaries to incur certain secured debt and to consummate certain sale and leaseback transactions and restrict the ability of the Obligor Group, as defined below, to merge, consolidate or sell all or substantially all of their assets.

Broadcom Corporation (“BRCM”) and Broadcom Technologies Inc. (“BTI”), 100%-owned subsidiaries of Broadcom (Broadcom, BRCM and BTI collectively, the “Obligor Group”), fully and unconditionally guarantee, jointly and severally, on an unsecured, unsubordinated basis, the 2020 and 2019 Senior Notes. The guarantee by BRCM and BTI will be automatically and unconditionally released upon the sale, exchange, disposition or other transfer of all or substantially all of the assets of such guarantor if any of these events occurs in compliance with the respective indentures. The guarantee by BRCM and BTI will also be automatically and unconditionally released if at any time the aggregate principal amount of indebtedness issued, borrowed or guaranteed by BRCM and BTI constitutes no more than 20% of the aggregate principal amount of indebtedness for borrowed money of Broadcom and its subsidiaries on a consolidated basis.

Pursuant to indentures dated January 19, 2017 and October 17, 2017 (collectively, the “2017 Indentures”), Broadcom Cayman Finance Limited (subsequently merged into BTI during fiscal year 2019 with BTI remaining as the surviving entity) and BRCM (BRCM and BTI collectively, the “2017 Senior Notes Co-Issuers”) issued $13,550 million and $4,000 million aggregate principal amount of notes, respectively (collectively, the “2017 Senior Notes”). Substantially all of the 2017 Senior Notes have been registered with the SEC.

We may redeem all or a portion of our 2017 Senior Notes at any time prior to their maturity, subject to a specified make-whole premium as set forth in the 2017 Indentures. In the event of a change of control triggering event, holders of our 2017 Senior Notes will have the right to require us to purchase for cash, all or a portion of their 2017 Senior Notes at a redemption price of 101% of the aggregate principal amount plus accrued and unpaid interest. The 2017 Indentures also contain covenants that restrict, among other things, the ability of Broadcom and its subsidiaries to incur certain secured debt and to consummate certain sale and leaseback transactions and restrict the ability of Broadcom and the 2017 Senior Notes Co-Issuers to merge, consolidate or sell all or substantially all of their assets.

Broadcom and BTI fully and unconditionally guarantee, jointly and severally, on an unsecured, unsubordinated basis, the 2017 Senior Notes. Because the guarantees are not secured, they are effectively subordinated to any existing and future secured indebtedness of the guarantors to the extent of the value of the collateral securing that indebtedness. The guarantee by Broadcom and BTI will be automatically and unconditionally released upon the sale, exchange, disposition or other transfer of all or substantially all of the assets of such guarantor if any of these events occurs in compliance with the 2017 Indentures. The guarantee by Broadcom (1) will also be automatically and unconditionally released at such time as: (A) the 2017 Senior

Table of Contents

Notes Co-Issuers, in their sole discretion, determine that such guarantee is no longer required by Rule 3-10(a), as applicable, of Regulation S-X to except the 2017 Senior Notes Co-Issuers' financial statements from being required to be filed pursuant to Rule 3-10(a) of Regulation S-X or otherwise facilitate a reduction in its financial reporting obligations or (B) either of the 2017 Senior Notes Co-Issuers becomes subject to Section 13 or 15(d) of the Exchange Act and (2) may, at the election of the 2017 Senior Notes Co-Issuers, be unconditionally released at such time as Broadcom is eligible to suspend its reporting obligation under the Exchange Act.

The following tables set forth the summarized financial information of the Obligor Group on a combined basis. This summarized financial information excludes any subsidiaries that are not issuers or guarantors (the "Non-Obligor Group"). Intercompany balances and transactions between members of the Obligor Group have been eliminated.

Summarized Balance Sheets	**November 1, 2020**
	(In millions)
ASSETS	
Current assets:	
Amount due from Non-Obligor Group	$ 1,889
Other current assets	4,091
Total current assets	$ 5,980
Long-term assets:	
Amount due from Non-Obligor Group, long-term	$ 8,220
Goodwill	1,360
Other long-term assets	1,318
Total long-term assets	$ 10,898
LIABILITIES	
Current liabilities:	
Amount due to Non-Obligor Group	$ 7,147
Current portion of long-term debt	807
Other current liabilities	601
Total current liabilities	$ 8,555
Long-term liabilities:	
Amount due to Non-Obligor Group, long-term	$ —
Long-term debt	39,311
Other long-term liabilities	2,477
Total long-term liabilities	$ 41,788

Summarized Statement of Operations	**Fiscal Year Ended November 1, 2020**
	(In millions)
Intercompany revenue with Non-Obligor Group	$ 1,683
Gross margin	$ 1,524
Loss from continuing operations [(a)]	$ (1,985)
Net loss	$ (1,985)

(a) Included $706 million of net income from the Non-Obligor Group related to intercompany transactions.

Table of Contents

Contractual Commitments

		Payments Due by Period			
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
			(In millions)		
Debt principal, interest and fees	$ 51,307	$ 2,286	$ 7,708	$ 13,122	$ 28,191
Purchase commitments	966	894	72	—	—
Other contractual commitments	1,137	248	430	220	239
Operating lease and finance lease obligations	845	141	212	136	356
Total	$ 54,255	$ 3,569	$ 8,422	$ 13,478	$ 28,786

Debt Principal, Interest and Fees. Represents principal, estimated interest and fees on our borrowings. For borrowings subject to a floating interest rate, the estimated interest was based on the rate in effect during the last month of the fiscal year ended November 1, 2020.

Purchase Commitments. Represents unconditional purchase obligations that include agreements to purchase goods or services, primarily inventory, that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable price provisions, and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty. Cancellation for outstanding purchase orders for capital expenditures in connection with construction of our new campuses is generally allowed but requires payment of all costs incurred through the date of cancellation and, therefore, cancelable purchase orders for these capital expenditures are included in the table above.

Other Contractual Commitments. Represents amounts payable pursuant to agreements related to information technology, human resources, and other service agreements.

Operating Lease and Finance Lease Obligations. Represents real property and equipment leased from third parties under non-cancelable leasing arrangements.

Due to the inherent uncertainty with respect to the timing of future cash outflows associated with our unrecognized tax benefits at November 1, 2020, we are unable to reliably estimate the timing of cash settlement with the respective taxing authority. Therefore, $3,185 million of unrecognized tax benefits and accrued interest classified within other long-term liabilities on our consolidated balance sheet as of November 1, 2020 have been excluded from the contractual obligations table above.

Off-Balance Sheet Arrangements

We had no material off-balance sheet arrangements at November 1, 2020 as defined in Item 303(a)(4)(ii) of Regulation S-K under the Exchange Act.

Indemnifications

See Note 14. “Commitments and Contingencies” in Part II, Item 8 of this Form 10-K.

Accounting Changes and Recent Accounting Standards

For a description of accounting changes and recent accounting standards, including the expected dates of adoption and estimated effects, if any, in our consolidated financial statements, see Note 2. “Summary of Significant Accounting Policies” included in Part II, Item 8. of this Annual Report on Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Derivative Instruments

From time to time, we use foreign exchange forward contracts to hedge a portion of our exposures to changes in currency exchange rates, which result from our global operating and financing activities. Gains and losses from foreign currency transactions, as well as derivative instruments, were not significant for any period presented in the consolidated financial statements included in this Form 10-K. As of November 1, 2020, we did not have any outstanding foreign exchange forward contracts.

European Debt Exposures

We actively monitor our exposure to the European financial markets, including the impact of sovereign debt issues. We also seek to mitigate our risk by investing in fixed deposits with various financial institutions and we limit the amount we hold with any one institution. We do not have any direct investments in the sovereign debt of European countries. From time to time, we may have deposits with major European financial institutions. We also seek to mitigate collection risks from our customers by performing regular credit evaluations of our customers' financial condition. As of November 1, 2020, we do not believe that we have any material direct or indirect exposure to the European financial markets.

Interest Rate Risk

As of November 1, 2020, we had $5.9 billion of outstanding term loans, which are subject to floating interest rates. A 1% change in the interest rate would affect interest expense on our term loans by approximately $59 million over the next 12 months.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

BROADCOM INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Broadcom Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Broadcom Inc. and its subsidiaries (the "Company") as of November 1, 2020 and November 3, 2019, and the related consolidated statements of operations, of comprehensive income, of equity and of cash flows for each of the three years in the period ended November 1, 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 November 1, 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 November 1, 2020 and November 3, 2019, and the results of its operations and its cash flows for each of the three years in the period ended November 1, 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 November 1, 2020, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in fiscal 2020.

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.

Valuation of Developed Technology and Customer Contracts and Related Relationships Intangible Assets Acquired - Symantec Corporation Enterprise Security Business

As described in Notes 2 and 4 to the consolidated financial statements, the Company completed the purchase of certain assets and assumption of certain liabilities of the Symantec Corporation Enterprise Security business on November 4, 2019 for $10.7 billion in cash, of which $2.9 billion of finite-lived developed technology and $2.4 billion of finite-lived customer contracts and related relationships intangible assets were recorded. Management valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. Management valued the customer contracts and related relationships using the with-and-without-method under the income approach. In this method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. Significant estimates and assumptions in estimating the fair value of the developed technology and the customer contracts and related relationships include future expected cash flows from product sales, customer contracts and acquired technologies, revenue growth rate, customer ramp-up period, technology obsolescence rates, and discount rates.

The principal considerations for our determination that performing procedures relating to the valuation of the developed technology and the customer contracts and related relationships intangible assets acquired in the Symantec Corporation Enterprise Security business acquisition is a critical audit matter are (i) a high degree of auditor judgment and subjectivity in performing procedures relating to the fair value measurement of the developed technology and the customer contracts and related relationships due to the significant judgment by management when developing these estimates, (ii) the significant audit effort in evaluating the significant assumptions relating to the valuation of the developed technology and the customer contracts and related relationships related to the revenue growth rate, the customer ramp-up period, the technology obsolescence rates, and the discount rates, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

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 acquisition accounting, including controls over management’s valuation of the developed technology and the customer contracts and related relationships and controls over development of the assumptions related to the revenue growth rate, the customer ramp-up period, the technology obsolescence rates, and the discount rates. These procedures also included, among others, reading the purchase agreement and testing management’s process for determining the fair value of these intangible assets, including evaluating the appropriateness of the valuation methods, testing the completeness and accuracy of data used in the methods, and evaluating the reasonableness of the significant assumptions related to the revenue growth rate, the customer ramp-up period, the technology obsolescence rates, and the discount rates. Evaluating the reasonableness of the revenue growth rate and the customer ramp-up period involved considering the past performance of the acquired business and industry data. Evaluating the reasonableness of the technology obsolescence rates involved considering the past performance of the acquired business and benchmarking of peer companies. Professionals with specialized skill and knowledge were used to assist in evaluating the appropriateness of valuation methods and the reasonableness of the customer ramp-up period, the technology obsolescence rates, and the discount rates.

/s/ PricewaterhouseCoopers LLP

San Jose, California
December 18, 2020

We have served as the Company’s auditor since 2006.

BROADCOM INC.
CONSOLIDATED BALANCE SHEETS

	November 1, 2020	November 3, 2019
	(In millions, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 7,618	$ 5,055
Trade accounts receivable, net	2,297	3,259
Inventory	1,003	874
Other current assets	977	729
Total current assets	11,895	9,917
Long-term assets:		
Property, plant and equipment, net	2,509	2,565
Goodwill	43,447	36,714
Intangible assets, net	16,782	17,554
Other long-term assets	1,300	743
Total assets	$ 75,933	$ 67,493
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 836	$ 855
Employee compensation and benefits	877	641
Current portion of long-term debt	827	2,787
Other current liabilities	3,831	2,616
Total current liabilities	6,371	6,899
Long-term liabilities:		
Long-term debt	40,235	30,011
Other long-term liabilities	5,426	5,613
Total liabilities	52,032	42,523
Commitments and contingencies (Note 14)		
Preferred stock dividend obligation	27	29
Stockholders' equity:		
Preferred stock, $0.001 par value; 100 shares authorized; 8.00% Mandatory Convertible Preferred Stock, Series A, 4 shares issued and outstanding; aggregate liquidation value of $3,738 as of November 1, 2020 and November 3, 2019	—	—
Common stock, $0.001 par value; 2,900 shares authorized; 407 and 398 shares issued and outstanding as of November 1, 2020 and November 3, 2019, respectively	—	—
Additional paid-in capital	23,982	25,081
Retained earnings	—	—
Accumulated other comprehensive loss	(108)	(140)
Total stockholders' equity	23,874	24,941
Total liabilities and equity	$ 75,933	$ 67,493

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Fiscal Year Ended		
	November 1, 2020	November 3, 2019	November 4, 2018
	(In millions, except per share data)		
Net revenue:			
Products	$ 17,435	$ 18,117	$ 19,754
Subscriptions and services	6,453	4,480	1,094
Total net revenue	23,888	22,597	20,848
Cost of revenue:			
Cost of products sold	5,892	6,208	6,924
Cost of subscriptions and services	626	515	97
Purchase accounting effect on inventory	—	—	70
Amortization of acquisition-related intangible assets	3,819	3,314	3,004
Restructuring charges	35	77	20
Total cost of revenue	10,372	10,114	10,115
Gross margin	13,516	12,483	10,733
Research and development	4,968	4,696	3,768
Selling, general and administrative	1,935	1,709	1,056
Amortization of acquisition-related intangible assets	2,401	1,898	541
Restructuring, impairment and disposal charges	198	736	219
Litigation settlements	—	—	14
Total operating expenses	9,502	9,039	5,598
Operating income	4,014	3,444	5,135
Interest expense	(1,777)	(1,444)	(628)
Impairment on investment	—	—	(106)
Other income, net	206	226	144
Income from continuing operations before income taxes	2,443	2,226	4,545
Benefit from income taxes	(518)	(510)	(8,084)
Income from continuing operations	2,961	2,736	12,629
Loss from discontinued operations, net of income taxes	(1)	(12)	(19)
Net income	2,960	2,724	12,610
Dividends on preferred stock	(297)	(29)	—
Net income attributable to noncontrolling interest	—	—	(351)
Net income attributable to common stock	$ 2,663	$ 2,695	$ 12,259
Basic income per share attributable to common stock:			
Income per share from continuing operations	$ 6.62	$ 6.80	$ 29.37
Loss per share from discontinued operations	—	(0.03)	(0.04)
Net income per share	$ 6.62	$ 6.77	$ 29.33
Diluted income per share attributable to common stock:			
Income per share from continuing operations	$ 6.33	$ 6.46	$ 28.48
Loss per share from discontinued operations	—	(0.03)	(0.04)
Net income per share	$ 6.33	$ 6.43	$ 28.44
Weighted-average shares used in per share calculations:			
Basic	402	398	418
Diluted	421	419	431

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Fiscal Year Ended		
	November 1, 2020	**November 3, 2019**	**November 4, 2018**
		(In millions)	
Net income	$ 2,960	$ 2,724	$ 12,610
Other comprehensive income (loss), net of tax:			
Change in actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	24	(24)	(8)
Other comprehensive income (loss), net of tax	24	(24)	(8)
Comprehensive income	2,984	2,700	12,602
Comprehensive income attributable to noncontrolling interest	—	—	351
Comprehensive income attributable to Broadcom Inc. stockholders	$ 2,984	$ 2,700	$ 12,251

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Fiscal Year Ended		
	November 1, 2020	November 3, 2019	November 4, 2018
		(In millions)	
Cash flows from operating activities:			
Net income	$ 2,960	$ 2,724	$ 12,610
Adjustments to reconcile net income to net cash provided by operating activities:			
Amortization of intangible and right-of-use assets	6,335	5,239	3,566
Depreciation	570	569	515
Stock-based compensation	1,976	2,185	1,227
Deferred taxes and other non-cash taxes	(1,142)	(934)	(8,270)
Impairment on investment	—	—	106
Loss on debt extinguishment	169	28	—
Non-cash restructuring, impairment and disposal charges	44	133	21
Non-cash interest expense	108	69	24
Other	(52)	(132)	37
Changes in assets and liabilities, net of acquisitions and disposals:			
Trade accounts receivable, net	981	486	(652)
Inventory	(31)	250	417
Accounts payable	(3)	(42)	(325)
Employee compensation and benefits	217	(294)	6
Contributions to defined benefit pension plans	—	—	(130)
Other current assets and current liabilities	331	(283)	369
Other long-term assets and long-term liabilities	(402)	(301)	(641)
Net cash provided by operating activities	12,061	9,697	8,880
Cash flows from investing activities:			
Acquisitions of businesses, net of cash acquired	(10,872)	(16,033)	(4,800)
Proceeds from sales of businesses	218	957	773
Purchases of property, plant and equipment	(463)	(432)	(635)
Proceeds from disposals of property, plant and equipment	12	88	239
Purchases of investments	—	(5)	(249)
Other	(4)	3	(2)
Net cash used in investing activities	(11,109)	(15,422)	(4,674)
Cash flows from financing activities:			
Proceeds from long-term borrowings	27,802	28,793	—
Repayment of debt	(18,814)	(16,800)	(973)
Other borrowings, net	(1,285)	1,241	—
Payment of dividends and distributions	(5,534)	(4,235)	(2,998)
Repurchases of common stock - repurchase program	—	(5,435)	(7,258)
Shares repurchased for tax withholdings on vesting of equity awards	(765)	(972)	(56)
Issuance of preferred stock, net	—	3,679	—
Issuance of common stock	276	253	212
Other	(69)	(36)	(45)
Net cash provided by (used in) financing activities	1,611	6,488	(11,118)
Net change in cash and cash equivalents	2,563	763	(6,912)
Cash and cash equivalents at beginning of period	5,055	4,292	11,204
Cash and cash equivalents at end of period	$ 7,618	$ 5,055	$ 4,292
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 1,408	$ 1,287	$ 547
Cash paid for income taxes	$ 501	$ 741	$ 512

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents

BROADCOM INC.

CONSOLIDATED STATEMENTS OF EQUITY

	Special Preference Preferred Stock		8.00% Mandatory Convertible Preferred Stock		Common Stock							
	Shares	Amount	Shares	Par Value	Shares	Par Value	Additional Paid-in Capital	Retained Earnings/ (Accumulated Deficit)	Accumulated Other Comprehensive Loss	Total Broadcom Inc. Stockholders' Equity	Noncontrolling Interest	
							(In millions)					
Balance as of October 29, 2017	22	$ —	—	$ —	409	$ —	$20,505	$ (129)	$ (91)	$20,285	$ 2,901	$
Net income	—	—	—	—	—	—	—	12,259	—	12,259	351	
Other comprehensive loss	—	—	—	—	—	—	—	—	(8)	(8)	—	
Cumulative effect of accounting change	—	—	—	—	—	—	—	(237)	(16)	(253)	(13)	
Fair value of partially vested equity awards assumed in connection with the acquisition of Brocade Communications Systems, Inc.	—	—	—	—	—	—	8	—	—	8	—	
Dividends to common stockholders	—	—	—	—	—	—	—	(2,921)	—	(2,921)	—	
Distributions by Broadcom Cayman L.P. on exchangeable limited partnership units	—	—	—	—	—	—	—	—	—	—	(77)	
Exchange of exchangeable limited partnership units for common stock and redemption of preferred stock due to the Redomiciliation Transaction	(22)	—	—	—	22	—	3,162	—	—	3,162	(3,162)	
Common stock issued	—	—	—	—	9	—	212	—	—	212	—	
Stock-based compensation	—	—	—	—	—	—	1,227	—	—	1,227	—	
Repurchases of common stock	—	—	—	—	(32)	—	(1,773)	(5,485)	—	(7,258)	—	
Shares repurchased for tax withholdings on vesting of equity awards	—	—	—	—	—	—	(56)	—	—	(56)	—	
Balance as of November 4, 2018	—	—	—	—	408	—	23,285	3,487	(115)	26,657	—	
Net income	—	—	—	—	—	—	—	2,724	—	2,724	—	

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Overview and Basis of Presentation

Overview

Broadcom Inc. ("Broadcom"), a Delaware corporation, is the successor to Broadcom Limited (now Broadcom Pte. Ltd.), a Singapore company ("Broadcom-Singapore"). On April 4, 2018, all Broadcom-Singapore outstanding ordinary shares were exchanged for newly issued shares of Broadcom common stock (the "Redomiciliation Transaction"). As a result, Broadcom-Singapore became a wholly-owned subsidiary of Broadcom. In addition, all outstanding exchangeable limited partnership units ("LP Units") of Broadcom Cayman L.P. (the "Partnership") were mandatorily exchanged (the "Mandatory Exchange") for newly issued shares of Broadcom common stock and all limited partners of the Partnership became common stockholders of Broadcom. Also, all related outstanding special preference shares of Broadcom-Singapore were automatically redeemed upon the Mandatory Exchange. The limited partners no longer hold a noncontrolling interest and we deregistered the Partnership.

The Redomiciliation Transaction was accounted for as an exchange of equity interests among entities under common control and the historical basis of accounting was retained as if the entities had always been combined for financial reporting purposes.

The financial statements relate to Broadcom-Singapore for periods prior to April 4, 2018, the effective date of the Redomiciliation Transaction, and relate to Broadcom for periods after April 4, 2018. Unless stated otherwise or the context otherwise requires, references to "Broadcom," "we," "our" and "us" mean Broadcom and its consolidated subsidiaries from and after the effective time of the Redomiciliation Transaction and, prior to that time, to our predecessor, Broadcom-Singapore.

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Our infrastructure software solutions enable customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. We offer a cyber security solutions portfolio, including endpoint, network, information and identity security solutions. We also offer mission critical fibre channel storage area networking ("FC SAN") products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products.

Basis of Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal year ended November 1, 2020 ("fiscal year 2020") was a 52-week fiscal year. The first quarter of our fiscal year 2020 ended on February 2, 2020, the second quarter ended on May 3, 2020 and the third quarter ended on August 2, 2020. Our fiscal year ended November 3, 2019 ("fiscal year 2019") was a 52-week fiscal year. Our fiscal year ended November 4, 2018 ("fiscal year 2018") was a 53-week fiscal year, with the first fiscal quarter containing 14 weeks.

On November 4, 2019, we completed the purchase of certain assets and assumption of certain liabilities of the Symantec Corporation Enterprise Security business (the "Symantec Business"). On November 5, 2018, we acquired CA, Inc. ("CA"). On November 17, 2017, we acquired Brocade Communications Systems, Inc. (“Brocade”). The accompanying consolidated financial statements include the results of operations of Symantec Business, CA and Brocade commencing as of their respective acquisition dates. See Note 4. “Acquisitions” for additional information.

Certain reclassifications have been made to the consolidated statement of cash flows for fiscal year 2019. These reclassifications have no impact on previously reported operating, investing or financing cash flows. During the first quarter of fiscal year 2020, we changed our organizational structure, resulting in two reportable segments: semiconductor solutions and infrastructure software. Reclassifications have also been made to segment operating income. Segment results from prior years have been recast to conform to the current presentation. See Note 13. “Segment Information” for additional information. These reclassifications have no impact on previously reported consolidated operating income.

The accompanying consolidated financial statements include the accounts of Broadcom and its subsidiaries and have been prepared in accordance with generally accepted principles in the United States (“GAAP”). All intercompany balances and transactions have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Foreign currency remeasurement. We operate in a U.S. dollar functional currency environment. As such, foreign currency assets and liabilities are remeasured into U.S. dollars at current exchange rates except for non-monetary items such as inventory and property, plant and equipment, which are remeasured at historical exchange rates. The effects of foreign currency remeasurement were not material for any period presented.

Use of estimates. The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The inputs into certain of these estimates and assumptions include the consideration of the economic impact of the COVID-19 pandemic. Actual results could differ materially from these estimates, and such differences could affect the results of operations reported in future periods. As the impact of the COVID-19 pandemic continues to develop, many of these estimates could require increased judgment and carry a higher degree of variability and volatility, and may change materially in future periods.

Cash and cash equivalents. We consider all highly liquid investment securities with original or remaining maturities of three months or less at the date of purchase to be cash equivalents. We determine the appropriate classification of our cash and cash equivalents at the time of purchase.

Trade accounts receivable, net. Trade accounts receivable are recognized at the invoiced amount and do not bear interest. Accounts receivable are reduced by an allowance for doubtful accounts, which is our best estimate of the amount of probable credit losses in our existing accounts receivable. We determine the allowance based on customer-specific experience and the aging of such receivables, among other factors. Allowances for doubtful accounts were not material as of November 1, 2020 or November 3, 2019. Accounts receivable are also recognized net of sales returns and distributor credit allowances. These amounts are recognized when it is both probable and estimable that discounts will be granted or products will be returned. Allowances for sales returns and distributor credit allowances as of November 1, 2020 and November 3, 2019 were $174 million and $178 million, respectively.

Concentrations of credit risk and significant customers. Our cash, cash equivalents and accounts receivable are potentially subject to concentration of credit risk. Cash and cash equivalents may be redeemable upon demand and are maintained with several financial institutions that management believes are of high credit quality and therefore bear minimal credit risk. We seek to mitigate our credit risks by spreading such risks across multiple counterparties and monitoring the risk profile of these counterparties. Our accounts receivable are derived from revenue earned from customers located both within and outside the U.S. We mitigate collection risks from our customers by performing regular credit evaluations of our customers’ financial conditions, and require collateral, such as letters of credit and bank guarantees, in certain circumstances.

Concentration of other risks. We operate in markets that are highly competitive and rapidly changing. Significant technological changes, shifting customer needs, the emergence of competitive products with new capabilities, general economic conditions worldwide, the ability to safeguard patents and other intellectual property in a rapidly evolving market and reliance on assembly and test subcontractors, third-party wafer fabricators and independent distributors and other factors could affect our financial results.

Inventory. We value our inventory at the lower of actual cost or net realizable value of the inventory, with cost being determined under the first-in, first-out method. We record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. The excess and obsolete balance determined by this analysis becomes the basis for our excess and obsolete inventory charge and the written-down value of the inventory becomes its new cost basis.

Retirement benefits. For defined benefit pension plans, we consider various factors in determining our respective pension liabilities and net periodic benefit costs, including the number of employees that we expect to receive benefits, their salary levels and years of service, the expected return on plan assets, the discount rate, the timing of the payment of benefits, and other actuarial assumptions. If the actual results and events of the retirement benefit plans differ from our current assumptions, the benefit obligations may be over- or under-valued.

Post-retirement benefit plan assets and liabilities are estimates of benefits that we expect to pay to eligible retirees. We consider various factors in determining the value of our post-retirement benefit plan assets and liabilities, including the number of employees that we expect to receive benefits and other actuarial assumptions.

The key benefit plan assumptions are the discount rate and the expected rate of return on plan assets. The U.S. discount rates are based on the results of matching expected plan benefit payments with cash flows from a hypothetical yield curve constructed with high-quality corporate bond yields. The U.S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy. For the non-U.S. plans, we set assumptions specific to each country. We have elected to measure defined benefit pension plan and post-retirement benefit plan assets and liabilities as of October 31, which is the month end that is closest to our fiscal year end.

Derivative instruments. We use derivative financial instruments, primarily foreign exchange forward contracts, to manage exposure to foreign exchange risk. Our forward contracts generally mature within three months. We do not use derivative financial instruments for speculative or trading purposes.

Outstanding derivatives are recognized as either assets or liabilities at their fair values based on Level 2 inputs as defined in the fair value hierarchy. The accounting for gains and losses resulting from changes in fair value depends on the use of the derivative and its hedging designation. For derivative instruments designated as fair value hedges, the changes in fair value are recognized in other income, net in the periods of change, and are offset by the changes in fair value of the hedged items. For derivative instruments designated as cash flow hedges, the changes in fair value of the effective portion are initially recognized in other comprehensive income (loss), net of tax in the period of change, and are subsequently reclassified and recognized in other income, net when either the hedged transactions affect earnings or it becomes probable that the hedged transactions will not occur. The changes in the fair value of the ineffective portion of the derivative instruments are recognized in other income, net in the period of change, which have not been material to date. For derivative instruments not designated as hedges, the changes in fair value are recognized in other income, net in the period of change. We did not have any outstanding derivative instruments as of November 1, 2020 or November 3, 2019.

Property, plant and equipment. Property, plant and equipment are stated at cost less accumulated depreciation and amortization. Additions, improvements and major renewals are capitalized, and maintenance, repairs and minor renewals are expensed as incurred. Assets are held in construction in progress until placed in service, upon which date, we begin to depreciate these assets. When assets are retired or disposed of, the assets and related accumulated depreciation and amortization are removed from our property, plant and equipment balances and the resulting gain or loss is reflected in the consolidated statements of operations. Buildings and leasehold improvements are generally depreciated over 15 to 40 years, or over the lease period, whichever is shorter, and machinery and equipment are generally depreciated over three to ten years. We use the straight-line method of depreciation for all property, plant and equipment.

Leases. We determine if an arrangement is a lease, or contains a lease, at the inception of the arrangement and evaluate whether the lease is an operating lease or a finance lease at the commencement date. We recognize right-of-use ("ROU") assets and lease liabilities for operating and finance leases with terms greater than 12 months. ROU assets represent our right to use an asset for the lease term, while lease liabilities represent our obligation to make lease payments. Operating and finance lease ROU assets and liabilities are recognized based on the present value of lease payments over the lease term at the lease commencement date. We use the implicit interest rate or, if not readily determinable, our incremental borrowing rate as of the lease commencement date to determine the present value of lease payments. The incremental borrowing rate is based on our unsecured borrowing rate, adjusted for the effects of collateral. Operating and finance lease ROU assets are recognized net of any lease prepayments and incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Operating lease expense is recognized on a straight-line basis over the lease term. Finance lease expense is recognized based on the effective-interest method over the lease term.

Fair value measurement. Fair value is defined as the price that would be received upon sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. A three level hierarchy is applied to prioritize the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

The three levels of the fair value hierarchy under the guidance for fair value measurements are described below:

Level 1 — Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Our Level 1 assets include cash equivalents, banker's acceptances, trading securities investments and investment funds. We measure trading securities investments and investment funds at quoted market prices as they are traded in active markets with sufficient volume and frequency of transactions.

Level 2 — Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. If the asset or liability has a specified contractual term, a Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 — Level 3 inputs are unobservable inputs for the asset or liability in which there is little, if any, market activity for the asset or liability at the measurement date. Level 3 assets and liabilities include investment in equity securities without readily determinable fair values, goodwill, intangible assets, and property, plant and equipment, which are measured at fair value using a discounted cash flow approach when they are impaired. Quantitative information for Level 3 assets and liabilities reviewed at each reporting period includes indicators of significant deterioration in the earnings performance, credit rating, asset quality, business prospects of the investee, and financial indicators of the investee's ability to continue as a going concern.

Business combinations. We account for business combinations under the acquisition method of accounting, which requires us to recognize separately from goodwill the assets acquired and the liabilities assumed at their acquisition date fair values. While we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recognized in our consolidated statements of operations. Accounting for business combinations requires our management to make significant estimates and assumptions, especially at the acquisition date including our estimates for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from the management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain acquired intangible assets under the income approach include growth in future expected cash flows from product sales, customer contracts and acquired technologies, revenue growth rate, customer ramp-up period, technology obsolescence rates, expected costs to develop in-process research and development ("IPR&D") into commercially viable products, estimated cash flows from the projects when completed and discount rates. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates or actual results.

Goodwill. Goodwill represents the excess of purchase price and related costs over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Goodwill is not amortized but is reviewed annually (or more frequently if impairment indicators arise) for impairment. To review for impairment we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit's net book value. If the fair value of the reporting unit is greater than its net book value, there is no impairment. Otherwise, we calculate the implied fair value of goodwill by deducting the fair value of all tangible and intangible assets, excluding goodwill, of the reporting unit from the fair value of the reporting unit. The implied fair value of goodwill is compared to the carrying value of goodwill. If the implied fair value of goodwill is less than the carrying value of goodwill, an impairment loss is recognized equal to the difference. Determining the fair value of a reporting unit involves the use of significant estimates and assumptions.

Long-lived assets. Purchased finite-lived intangible assets are carried at cost less accumulated amortization. Amortization is recognized over the periods during which the intangible assets are expected to contribute to our cash flows. Purchased IPR&D projects are capitalized at fair value as an indefinite-lived intangible asset and assessed for impairment thereafter. Upon completion of each underlying project, IPR&D assets are reclassified as amortizable purchased intangible assets and amortized over their estimated useful lives. If an IPR&D project is abandoned, we recognize the carrying value of the related intangible asset in our consolidated statements of operations in the period it is abandoned. On a quarterly basis, we monitor factors and changes in circumstances that could indicate carrying amounts of long-lived assets, including purchased intangible assets and property, plant and equipment, may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, and (iii) significant negative industry or economic trends. An impairment loss must be measured if the sum of the expected future cash flows (undiscounted and before interest) from the use and eventual disposition of the asset (or asset group) is less than the net book value of the asset (or asset group). The amount of the impairment loss will generally be measured as the difference between the net book value of the asset (or asset group) and the estimated fair value.

Warranty. We accrue for the estimated costs of product warranties at the time revenue is recognized. Product warranty costs are estimated based upon our historical experience and specific identification of the product requirements, which may fluctuate based on product mix. Additionally, we accrue for warranty costs associated with occasional or unanticipated product quality issues if a loss is probable and can be reasonably estimated.

Revenue recognition. We account for a contract with a customer when both parties have approved the contract and are committed to perform their respective obligations, each party's rights can be identified, payment terms can be identified, the contract has commercial substance, and it is probable we will collect substantially all of the consideration we are entitled to. Revenue is recognized when, or as, performance obligations are satisfied by transferring control of a promised product or service to a customer.

Nature of Products and Services

Our products and services can be broadly categorized as sales of products and subscriptions and services. The following is a description of the principal activities from which we generate revenue.

Products. We recognize revenue from sales to direct customers and distributors when control transfers to the customer. Rebates and incentives offered to distributors, which are earned when sales to end customers are completed, are estimated at the point of revenue recognition. We have elected to exclude from the transaction price any taxes collected from a customer and to account for shipping and handling activities performed after a customer obtains control of the product as activities to fulfill the promise to transfer the product.

Subscriptions and services. Our subscriptions and services revenue consists of sales and royalties from software arrangements, support services, professional services, transfer of intellectual property ("IP"), and non-recurring engineering ("NRE") arrangements.

Revenue from software arrangements primarily consists of fees, which may be paid either at contract inception or in installments over the contract term, that provide customers with a right to use the software, access general support and maintenance, and utilize our professional services.

Our software licenses have standalone functionality from which customers derive benefit, and the customer obtains control of the software when it is delivered or made available for download. We believe that for the majority of software arrangements, customers derive significant benefit from the ongoing support we provide. The majority of our subscriptions and services arrangements permit our customers to unilaterally terminate or cancel these arrangements at any time at the customer's convenience, referred to as termination for convenience provisions, without substantive termination penalty and receive a pro-rata refund of any prepaid fees. Accordingly, we account for arrangements with these termination for convenience provisions as a series of daily contracts, resulting in ratable revenue recognition of software revenue over the contractual period.

Support services consist primarily of telephone support and the provision of unspecified updates and upgrades on a when-and-if-available basis. Support services represent stand-ready obligations for which revenue is recognized ratably over the term of the arrangement.

Professional services consist of implementation, consulting, customer education and customer training services. The obligation to provide professional services is generally satisfied over time, with the customer simultaneously receiving and consuming the benefits as we satisfy our performance obligations.

Rights to our IP are either sold or licensed to a customer. IP revenue recognition is dependent on the nature and terms of each agreement. We recognize IP revenue upon delivery of the IP if there are no substantive future obligations to perform under the arrangement. Sales-based or usage-based royalties from the license of IP are recognized at the later of the period the sales or usages occur or the satisfaction of the performance obligation to which some or all of the sales-based or usage-based royalties have been allocated.

There are two main categories of NRE contracts that we enter into with our customers: (a) NRE contracts in which we develop a custom chip and (b) NRE contracts in which we accelerate our development of a new chip upon the customer's request. The majority of our

NRE contract revenues meet the over time criteria. As such, revenue is recognized over the development period with the measure of progress using the input method based on costs incurred to total cost (“cost-to-cost”) as the services are provided. For NRE contracts that do not meet the over time criteria, revenue is recognized at a point in time when the NRE services are complete.

Material rights. Contracts with customers may also include material rights that are also performance obligations. These include the right to renew or receive products or services at a discounted price in the future. Revenue allocated to material rights is recognized when the customer exercises the right or the right expires.

Arrangements with Multiple Performance Obligations

Our contracts may contain more than one of the products and services listed above, each of which is separately accounted for as a distinct performance obligation.

Allocation of consideration. We allocate total contract consideration to each distinct performance obligation in a bundled arrangement on a relative standalone selling price basis. The standalone selling price reflects the price we would charge for a specific product or service if it were sold separately in similar circumstances and to similar customers.

Standalone selling price. When available, we use directly observable transactions to determine the standalone selling prices for performance obligations. Our estimates of standalone selling price for each performance obligation require judgment that considers multiple factors, including, but not limited to, historical discounting trends for products and services and pricing practices through different sales channels, gross margin objectives, internal costs, competitor pricing strategies, technology lifecycles and market conditions.

We separately determine the standalone selling prices by product or service type. Additionally, we segment the standalone selling prices for products where the pricing strategies differ, and where there are differences in customers and circumstances that warrant segmentation.

We also estimate the standalone selling price of our material rights. Lastly, we estimate the value of the customer's option to purchase or receive additional products or services at a discounted price by estimating the incremental discount the customer would obtain when exercising the option and the likelihood that the option would be exercised.

Other Policies and Judgments

Contract modifications. We may modify contracts to offer customers additional products or services. Each of the additional products and services is generally considered distinct from those products or services transferred to the customer before the modification. We evaluate whether the contract price for the additional products and services reflects the standalone selling price as adjusted for facts and circumstances applicable to that contract. In these cases, we account for the additional products or services as a separate contract. In other cases where the pricing in the modification does not reflect the standalone selling price as adjusted for facts and circumstances applicable to that contract, we account for the additional products or services as part of the existing contract on a prospective basis, on a cumulative catch-up basis, or a combination of both based on the nature of the modification. In instances where the pricing in the modification offers the customer a credit for a prior arrangement, we adjust our variable consideration reserves for returns and other concessions.

Right of return. Certain contracts contain a right of return that allows the customer to cancel all or a portion of the product or service and receive a credit. We estimate returns based on historical returns data which is constrained to an amount for which a material revenue reversal is not probable. We do not recognize revenue for products or services that are expected to be returned.

Transition practical expedient elected. We do not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed. For contracts that were modified before the beginning of the earliest reporting period presented, we have not retrospectively restated the contract for those modifications. We have disclosed the aggregate effect of all modifications when identifying the satisfied and unsatisfied performance obligations for purposes of determining the transaction price and allocating the transaction price at transition.

Research and development. Research and development expense consists primarily of personnel costs for our engineers and third parties engaged in the design and development of our products, software and technologies, including salary, bonus and stock-based compensation expense, project material costs, services and depreciation. Such costs are charged to research and development expense as they are incurred.

Stock-based compensation expense. We recognize compensation expense for time-based restricted stock units ("RSUs") using the straight-line amortization method based on the fair value of RSUs on the date of grant. The fair value of RSUs is the closing market price of Broadcom common stock on the date of grant, reduced by the present value of dividends expected to be paid on Broadcom common stock prior to vesting. We recognize compensation expense for time-based stock options and employee stock purchase plan rights under the Broadcom Inc. Employee Stock Purchase Plan, as amended ("ESPP") based on the estimated grant-date fair value determined using the Black-Scholes valuation model with a straight-line amortization method.

Certain equity awards include both service and market conditions. The fair value of market-based awards is estimated on the date of grant using the Monte Carlo simulation technique. Compensation expense for market-based awards is amortized based upon a graded vesting method over the service period.

We estimate forfeitures expected to occur and recognize stock-based compensation expense for such awards expected to vest. Changes in the estimated forfeiture rates can have a significant effect on stock-based compensation expense since the effect of adjusting the rate is recognized in the period the forfeiture estimate is changed.

Shipping and handling costs. Our shipping and handling costs charged to customers are included in net revenue and the associated expense is included in cost of revenue for all periods presented.

Litigation and settlement cost. We are involved in legal actions and other matters arising in our recent business acquisitions and in the normal course of business. We recognize an estimated loss contingency when the outcome is probable prior to issuance of the consolidated financial statements and we are able to reasonably estimate the amount or range of any possible loss.

Taxes on income. We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the consolidated financial statements and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We recognize net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. If we determine that we are able to realize our deferred income tax assets in the future in excess of their net carrying values, we adjust the valuation allowance and reduce the provision for income taxes or increase the benefit from income taxes. Likewise, if we determine that we are not able to realize all or part of our net deferred tax assets, we increase the provision for income taxes or decrease the benefit from income taxes in the period such determination is made.

We account for uncertainty in income taxes in accordance with the applicable accounting guidance on income taxes. This guidance provides that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits.

Net income per share. Basic net income per share is computed by dividing net income attributable to common stock by the weighted-average number of shares of common stock outstanding during the period. Diluted net income per share is computed by dividing net income attributable to common stock by the weighted-average number of shares of common stock and potentially dilutive shares of common stock outstanding during the period. Diluted shares outstanding include the dilutive effect of unvested RSUs, in-the-money stock options, and ESPP rights (together referred to as "equity awards"), as well as convertible preferred stock and LP Units. Potentially dilutive shares whose effect would have been antidilutive are excluded from the computation of diluted net income per share.

The dilutive effect of equity awards is calculated based on the average stock price for each fiscal period, using the treasury stock method. Under the treasury stock method, the amount the employee must pay for exercising stock options and purchasing shares under the ESPP and the amount of compensation cost for future service that we have not yet recognized are collectively assumed to be used to repurchase shares. The dilutive effect of convertible preferred stock and LP Units is calculated using the if-converted method. The if-converted method assumes that these securities were converted at the beginning of the reporting period to the extent that the effect is dilutive.

Recent Accounting Guidance

In February 2016, the Financial Accounting Standards Board (the "FASB") issued Accounting Standards Update ("ASU") 2016-02, *Leases* ("Topic 842"), which requires a lessee to recognize lease assets and lease liabilities on the balance sheet for operating leases. At the beginning of fiscal year 2020, we adopted Topic 842 using the optional adoption method, whereby no adjustment to the financial statements of comparative periods is required. We elected practical expedients which allowed us to account for the lease and non-lease components as a single component. In addition, we elected not to reassess whether any expired or existing contracts contain leases and the corresponding lease classification and initial direct costs. The practical expedients were applied across our lease portfolios. Upon adoption, we recorded net ROU assets of $545 million and lease liabilities of $591 million and there were no cumulative effect adjustments as of November 4, 2019. The net ROU assets included the effect of reclassifying deferred rent and a portion of facilities-related restructuring reserves as an offset in accordance with the transition guidance. The standard did not materially affect the consolidated statement of operations and the consolidated statement of cash flows. See Note 6. "Leases" for further information.

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform*. This guidance provides optional expedients and exceptions for applying GAAP to contracts, hedging relationships and other transactions, subject to meeting certain criteria, that reference the London Interbank Offered Rate ("LIBOR") or another reference rate expected to be discontinued because of reference rate reform. The amendments in this ASU were effective upon issuance and may be applied through December 31, 2022. This guidance had no impact on our contracts, hedging relationships and other transactions as of November 1, 2020.

3. Revenue from Contracts with Customers

Disaggregation

We have considered (1) information that is regularly reviewed by our Chief Executive Officer, who has been identified as the Chief Operating Decision Maker (the "CODM") as defined by the authoritative guidance on segment reporting, in evaluating financial performance and (2) disclosures presented outside of our financial statements in our earnings releases and used in investor presentations to disaggregate revenues. The principal category we use to disaggregate revenues is the nature of our products and subscriptions and services, as presented in our consolidated statements of operations. In addition, revenues by reportable segment are presented in Note 13. "Segment Information".

The following tables present revenue disaggregated by type of revenue and by region for the periods presented:

	Fiscal Year Ended November 1, 2020			
	Americas	Asia Pacific	Europe, the Middle East and Africa	Total
	(In millions)			
Products	$ 1,775	$ 14,442	$ 1,218	$ 17,435
Subscriptions and services[(a)]	4,059	881	1,513	6,453
Total	$ 5,834	$ 15,323	$ 2,731	$ 23,888

	Fiscal Year Ended November 3, 2019			
	Americas	Asia Pacific	Europe, the Middle East and Africa	Total
	(In millions)			
Products	$ 2,023	$ 14,857	$ 1,237	$ 18,117
Subscriptions and services[(a)]	3,126	374	980	4,480
Total	$ 5,149	$ 15,231	$ 2,217	$ 22,597

(a) Subscriptions and services predominantly includes software licenses with termination for convenience clauses.

Although we recognize revenue for the majority of our products when title and control transfer in Penang, Malaysia, we disclose net revenue by region based on the geographic shipment or delivery location specified by our distributors, original equipment manufacturer ("OEM") customers, contract manufacturers, channel partners, or software customers.

Contract Balances

Contract assets and contract liabilities balances were as follows:

	Contract Assets	Contract Liabilities
	(In millions)	
Opening balance November 3, 2019	$ 259	$ 1,808
Closing balance November 1, 2020 [(a)]	$ 158	$ 3,443

(a) Contract liabilities associated with the Symantec Business were included in the balance as of November 1, 2020.

Changes in our contract assets and contract liabilities primarily result from the timing difference between our performance and the customer's payment. We fulfill our obligations under a contract with a customer by transferring products and services in exchange for consideration from the customer. We recognize a contract asset when we transfer products or services to a customer and the right to consideration is conditional on something other than the passage of time. Accounts receivable are recorded when the customer has been billed or the right to consideration is unconditional. We recognize contract liabilities when we have received consideration or an amount of consideration is due from the customer and we have a future obligation to transfer products or services. Contract liabilities include amounts billed or collected and advanced payments on contracts or arrangements which may include termination for convenience provisions. The amount of revenue recognized during fiscal year 2020 that was included in the contract liabilities balance as of November 3, 2019 was $1,450 million. The amount of revenue recognized during fiscal year 2019 that was included in the contract liabilities balance as of November 5, 2018, the beginning of our fiscal year 2019, was $200 million.

Remaining Performance Obligations

Revenue allocated to remaining performance obligations represents the transaction price allocated to the performance obligations that are unsatisfied, or partially unsatisfied. It includes unearned revenue and amounts that will be invoiced and recognized as revenue in future periods and does not include contracts for subscriptions and services where the customer is not committed. The customer is not considered committed when termination for convenience without payment of a substantive penalty exists, either contractually or through customary business practice. The majority of our customer software contracts include termination for convenience clauses without a substantive penalty and are accordingly deemed to not be committed. Additionally, as a practical expedient, we have not included contracts that have an original duration of one year or less nor have we included contracts with sales-based and usage-based royalties promised in exchange for a license of IP.

Because the substantial majority of our customer software contracts allow our customers to terminate for convenience without a substantive penalty or have an original duration of one year or less, the total amount of the transaction price allocated to remaining performance obligations as of November 1, 2020 was not material. Since the majority of our software contracts are not deemed to be committed, although our customers generally do not exercise their termination for convenience rights, and the majority of the contracts we execute for products, as well as subscriptions and services, have a duration of one year or less, our remaining performance obligations are not indicative of revenue for future periods.

4. Acquisitions

Acquisition of the Symantec Corporation Enterprise Security Business

On November 4, 2019 (the "Symantec Acquisition Date"), we completed the purchase of the Symantec Business, which was an established leader in cyber security, for $10.7 billion in cash (the "Symantec Asset Purchase"). We acquired the Symantec Business to expand our footprint of mission critical infrastructure software with our existing customer base. The Symantec Business includes a deep and broad mix of products, services and solutions, unifying cloud and on-premises security to provide advanced threat protection and information protection across endpoints, network, email and cloud applications. We financed this acquisition with the net proceeds from borrowings under the November 2019 Term Loans, as defined in Note 10. "Borrowings".

The following table presents our allocation of the total purchase price:

	Fair Value
	(In millions)
Current assets	$ 273
Goodwill	6,638
Intangible assets	5,411
Other long-term assets	92
Total assets acquired	12,414
Current liabilities	(1,127)
Other long-term liabilities	(587)
Total liabilities assumed	(1,714)
Fair value of net assets acquired	$ 10,700

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the Symantec Business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved as a result of the Symantec Asset Purchase. Substantially all goodwill is deductible for tax purposes.

Current assets and current liabilities included amounts held-for-sale related to the acquired Symantec Cyber Security Services ("CSS") business. The CSS business was not aligned with our acquisition-date strategic objectives and was sold on April 30, 2020. We do not have any material continuing involvement with this business and have presented its results in discontinued operations.

Our results of continuing operations for fiscal year 2020 included $1,610 million of net revenue attributable to the Symantec Business. It was impracticable to determine the effect on net income attributable to the Symantec Business as we had integrated the Symantec Business into our ongoing operations during the year. The results of operations of the Symantec Business were included in our infrastructure software segment. Transaction costs related to the Symantec Asset Purchase of $110 million were included in selling, general and administrative expense for fiscal year 2020.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 2,900	5
Customer contracts and related relationships	2,410	5
Trade name	90	6
Order backlog	11	3
Total identified finite-lived intangible assets	$ 5,411	

Developed technology relates to products used for cyber security solutions, including data loss prevention, endpoint protection, and web, email and cloud security solutions. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of the Symantec Business. Customer contracts and related relationships were valued using the with-and-without-method under the income approach. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. The economic useful life was determined by evaluating many factors, including the useful life of other intangible assets, the length of time remaining on the acquired contracts and the historical customer turnover rates.

Trade name relates to the "Symantec" trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

Order backlog represents business under existing contractual obligations. The fair value of backlog was determined using the multi-period excess earnings method under the income approach based on expected operating cash flows from future contractual revenue. The economic useful life was determined based on the expected life of the backlog and the cash flows over the forecast period.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the Symantec Acquisition Date.

Table of Contents

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for the periods presented, as if we had completed the Symantec Asset Purchase as of the beginning of fiscal year 2019. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to interest expense for the additional indebtedness incurred to complete the acquisition, restructuring charges related to the acquisition and transaction costs. For the fiscal year 2019, non-recurring pro forma adjustments directly attributable to the Symantec Asset Purchase included transaction costs of $136 million. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2019 or of the results of our future operations of the combined business.

	Fiscal Year	
	2020	**2019**
	(In millions)	
Pro forma net revenue	$ 23,264	$ 24,227
Pro forma net income attributable to common stock	$ 2,368	$ 1,265

Other Acquisitions

During the fiscal year ended November 1, 2020, we also completed three other acquisitions qualifying as business combinations for total consideration of $201 million, of which $109 million was allocated to goodwill and $46 million was allocated to intangible assets.

Acquisition of CA, Inc.

On November 5, 2018 (the "CA Acquisition Date"), we completed our acquisition of CA (the "CA Merger"), which was a leading provider of information technology ("IT") management software and solutions. We acquired CA to enhance our infrastructure software capabilities. We financed the CA Merger with the net proceeds from $18 billion of term loans, as well as with cash on hand of the combined companies.

Purchase Consideration

	(In millions)
Cash paid for outstanding CA common stock	$ 18,402
Cash paid by Broadcom to retire CA's term loan	274
Cash paid for vested CA equity awards	101
Fair value of partially vested assumed equity awards	67
Total purchase consideration	18,844
Less: cash acquired	(2,750)
Total purchase consideration, net of cash acquired	$ 16,094

All vested in-the-money CA stock options, after giving effect to any acceleration, and all outstanding deferred stock units were cashed out upon the completion of the CA Merger. We assumed all unvested CA equity awards held by continuing employees. The portion of the fair value of partially vested equity awards associated with prior service of CA employees represents a component of the total consideration as presented above and was valued based on our share price as of the CA Acquisition Date.

Table of Contents

The following table presents our allocation of the total purchase price, net of cash acquired:

	Fair Value
	(In millions)
Current assets	$ 1,665
Goodwill	9,796
Intangible assets	12,045
Other long-term assets	240
Total assets acquired	23,746
Current liabilities	(1,966)
Long-term debt	(2,255)
Other long-term liabilities	(3,431)
Total liabilities assumed	(7,652)
Fair value of net assets acquired	$ 16,094

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the CA business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved as a result of the CA Merger. Goodwill is not deductible for tax purposes.

Current assets included assets held-for-sale related to CA's Veracode business, which was not aligned with our strategic objectives. On December 31, 2018, we sold this business to Thoma Bravo, LLC for cash consideration of $950 million, before working capital adjustments. We do not have any material continuing involvement with this business and have presented its results in discontinued operations. Current assets also included $80 million of real properties held-for-sale. During fiscal year 2019, we sold a portion of these real properties for $62 million and recognized a loss of $8 million.

Our results of continuing operations for fiscal year 2019 included $3,377 million of net revenue attributable to CA. It was impracticable to determine the effect on net income attributable to CA as we had integrated a substantial portion of CA into our ongoing operations during the year. The results of operations of CA were included in our infrastructure software segment. Transaction costs related to the CA Merger of $73 million were included in selling, general and administrative expense for fiscal year 2019.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 4,957	6
Customer contracts and related relationships	4,190	6
Order backlog	2,569	3
Trade name and other	137	5
Total identified finite-lived intangible assets	11,853	
IPR&D	192	N/A
Total identified intangible assets	$ 12,045	

Developed technology relates to products used for mission critical business tools for processes and applications, as well as products used for cloud-based planning, development, management and security tools. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of CA. Customer contracts and related relationships were valued using the with-and-without-method under the income approach. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. The economic useful life was determined by evaluating many factors, including the useful life of other intangible assets, the length of time remaining on the acquired contracts and the historical customer turnover rates.

Order backlog represents business under existing contractual obligations. The fair value of backlog was determined using the multi-period excess earnings method under the income approach based on expected operating cash flows from future contractual revenue. The economic useful life was determined based on the expected life of the backlog and the cash flows over the forecast period.

Trade name relates to the "CA" trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

The fair value of IPR&D was determined using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the IPR&D, less charges representing the contribution of other assets to those cash flows.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the CA Acquisition Date.

The following table summarizes the details of IPR&D by category as of the CA Acquisition Date:

Description	IPR&D	Percentage of Completion	Estimated Cost to Complete	Expected Completion Date (By Fiscal Year)
		(Dollars in millions)		
Mainframe	$ 178	67 %	$ 138	2019
Enterprise Solutions	$ 14	63 %	$ 12	2019

Discount rates of 12% and 14% were applied to the projected cash flows to reflect the risk related to these mainframe and enterprise solutions IPR&D projects, respectively.

During fiscal year 2020, these IPR&D projects were completed and placed in service.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for each of the periods presented, as if CA had been acquired as of the beginning of fiscal year 2018. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to stock-based compensation expense, interest expense for the additional indebtedness incurred to complete the acquisition, restructuring charges related to the acquisition and transaction costs. For fiscal year 2018, non-recurring pro forma adjustments directly attributable to the CA Merger included transaction costs of $180 million.

The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2018 or of the results of our future operations of the combined business.

	Fiscal Year	
	2019	**2018**
	(In millions)	
Pro forma net revenue*	$ 21,697	$ 24,451
Pro forma net income attributable to common stock	$ 2,535	$ 9,783

***** Pro forma net revenue was presented under ASU 2014-09, Revenue from Contracts with Customers, for fiscal year 2019 and under Accounting Standards Codification 605, Revenue Recognition (“Topic 605”), for fiscal year 2018.

Acquisition of Brocade

On November 17, 2017 (the "Brocade Acquisition Date"), we acquired Brocade (the "Brocade Merger"). Brocade was a supplier of networking hardware, software and services, including FC SAN products and Internet Protocol Networking ("IP Networking") solutions. We acquired Brocade to enhance our position as a provider of enterprise storage connectivity solutions, broaden our portfolio for enterprise storage, and to increase our ability to address the evolving needs of our OEM customers. We financed the Brocade Merger with a portion of the net proceeds from the issuance of the 2017 Senior Notes, as defined in Note 10. "Borrowings" as well as with cash on hand.

Purchase Consideration

	(In millions)
Cash paid for outstanding Brocade common stock	$ 5,298
Cash paid by Broadcom to retire Brocade's term loan	701
Cash paid for Brocade equity awards	31
Fair value of partially vested assumed equity awards	8
Total purchase consideration	6,038
Less: cash acquired	(1,250)
Total purchase consideration, net of cash acquired	$ 4,788

We assumed all unvested Brocade stock options, RSUs and performance stock units ("PSUs") held by continuing employees. The portion of the fair value of partially vested equity awards associated with prior service of Brocade employees represents a component of the total consideration as presented above. All vested in-the-money Brocade stock options, after giving effect to any acceleration, were cashed out upon the completion of the Brocade Merger. RSUs and PSUs were valued based on our share price as of the Brocade Acquisition Date.

The following table presents our allocation of the total purchase price, net of cash acquired:

	Fair Value
	(In millions)
Current assets	$ 1,297
Goodwill	2,187
Intangible assets	3,396
Other long-term assets	82
Total assets acquired	6,962
Current portion of long-term debt	(856)
Other current liabilities	(374)
Long-term debt	(38)
Other long-term liabilities	(906)
Total liabilities assumed	(2,174)
Fair value of net assets acquired	$ 4,788

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the Brocade business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved as a result of the Brocade Merger. Goodwill is not deductible for tax purposes.

Current assets included assets held-for-sale related to Brocade's IP Networking business, which was not aligned with our strategic objectives. On December 1, 2017, we sold this business to ARRIS International plc ("ARRIS") for cash consideration of $800 million, before contractual working capital adjustments. In connection with this sale, we indemnified ARRIS for $116 million of potential income tax liabilities. We provided transitional services as short-term assistance to ARRIS in assuming the operations of the purchased business. We do not have any material continuing involvement with this business and have presented its results in discontinued operations.

Current assets also included assets held-for-sale for Brocade's headquarters, which was sold for $224 million during fiscal year 2018, for no gain or loss.

Our results of continuing operations for fiscal year 2018 included $1,780 million of net revenue attributable to Brocade. It was impracticable to determine the effect on net income attributable to Brocade as we had integrated a substantial portion of Brocade into our ongoing operations. The results of operations of Brocade were primarily included in our infrastructure software segment. Transaction costs of $29 million related to the Brocade Merger were included in selling, general and administrative expense for fiscal year 2018.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 2,925	10
Customer contracts and related relationships	255	11
Trade name and other	61	6
Total identified finite-lived intangible assets	3,241	
IPR&D	155	N/A
Total identified intangible assets	$ 3,396	

Developed technology relates to products for FC SAN applications. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of Brocade. Customer contracts and related relationships were valued using the distributor method and the with-and-without-method under the income approach. The distributor method determines the fair value by measuring the economic profits generated by an intermediary, which in our case represented OEM customers. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. In both instances, the economic useful life was determined based on historical customer turnover rates.

Trade name relates to the “Brocade” trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

The fair value of IPR&D was determined using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the IPR&D, less charges representing the contribution of other assets to those cash flows.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the Brocade Acquisition Date.

The following table summarizes the details of IPR&D by category at the Brocade Acquisition Date:

Description	IPR&D	Percentage of Completion	Estimated Cost to Complete	Expected Completion Date (By Fiscal Year)
		(Dollars in millions)		
Directors	$ 64	72 %	$ 45	2019
Switches	$ 50	81 %	$ 21	2018
Embedded	$ 31	74 %	$ 22	2019
Networking software	$ 10	73 %	$ 27	2018

A discount rate of 11% was applied to the projected cash flows to reflect the risk related to these IPR&D projects. The discount rate represented a premium of 1% over the weighted-average cost of capital to reflect the higher risk and uncertainty of the cash flows for IPR&D relative to the overall businesses.

During fiscal year 2020, these IPR&D projects were completed and placed in service.

Table of Contents

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for the period presented, as if Brocade had been acquired as of the beginning of fiscal year 2017. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to stock-based compensation expense, the purchase accounting effect on inventory acquired, restructuring charges related to the acquisition and transaction costs. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2017 or of the results of our future operations of the combined business.

	Fiscal Year 2018
	(In millions)
Pro forma net revenue*	$ 20,978
Pro forma net income attributable to common stock	$ 12,408

* Pro forma net revenue was presented under Topic 605 for fiscal year 2018.

5. Supplemental Financial Information

Cash Equivalents

Cash equivalents included $2,471 million and $850 million of time deposits and $790 million and $649 million of money-market funds as of November 1, 2020 and November 3, 2019, respectively. For time deposits, carrying value approximates fair value due to the short-term nature of the instruments. The fair value of money-market funds, which was consistent with their carrying value, was determined using unadjusted prices in active, accessible markets for identical assets, and as such they were classified as Level 1 assets in the fair value hierarchy.

Accounts Receivable Factoring

We sell certain of our trade accounts receivable on a non-recourse basis to third-party financial institutions pursuant to factoring arrangements. We account for these transactions as sales of receivables and present cash proceeds as cash provided by operating activities in the consolidated statements of cash flows. Total trade accounts receivable sold under the factoring arrangements were $3,723 million, $1,151 million and $362 million during fiscal years 2020, 2019 and 2018, respectively. Factoring fees for the sales of receivables were recorded in other income, net and were not material for any period presented.

Inventory

	November 1, 2020	November 3, 2019
	(In millions)	
Finished goods	$ 323	$ 339
Work-in-process	558	414
Raw materials	122	121
Total inventory	$ 1,003	$ 874

Property, Plant and Equipment, Net

	November 1, 2020	November 3, 2019
	(In millions)	
Land	$ 194	$ 189
Construction in progress	113	85
Buildings and leasehold improvements	1,133	1,078
Machinery and equipment	3,891	3,544
Total property, plant and equipment	5,331	4,896
Accumulated depreciation and amortization	(2,822)	(2,331)
Total property, plant and equipment, net	$ 2,509	$ 2,565

Depreciation expense was $570 million, $569 million and $515 million for fiscal years 2020, 2019, and 2018, respectively.

As of November 1, 2020 and November 3, 2019, $27 million and $35 million, respectively, of unpaid purchases of property, plant and equipment were included in accounts payable. Amounts reported as unpaid purchases are presented as cash outflows from investing activities for purchases of property, plant and equipment in the consolidated statements of cash flows in the period in which they are paid.

Other Current Assets

	November 1, 2020	November 3, 2019
	(In millions)	
Prepaid expenses	$ 387	$ 302
Other (miscellaneous)	590	427
Total other current assets	$ 977	$ 729

Other Current Liabilities

	November 1, 2020	November 3, 2019
	(In millions)	
Contract liabilities	$ 2,620	$ 1,501
Tax liabilities	440	229
Other (miscellaneous)	771	886
Total other current liabilities	$ 3,831	$ 2,616

Other Long-Term Liabilities

	November 1, 2020	November 3, 2019
	(In millions)	
Unrecognized tax benefits	$ 3,185	$ 3,269
Contract liabilities	823	307
Other (miscellaneous)	1,418	2,037
Total other long-term liabilities	$ 5,426	$ 5,613

Other Income, Net

	Fiscal Year		
	2020	2019	2018
	(In millions)		
Gain from lapse of indemnification	$ 116	$ —	$ —
Other income	56	18	27
Interest income	53	98	114
Gains on investments	31	145	3
Other expense	(50)	(35)	—
Other income, net	$ 206	$ 226	$ 144

Other income includes gains on sales of businesses and other miscellaneous items.

6. Leases

We have entered into operating and finance leases for our facilities, data centers and certain equipment. Operating lease expense was $106 million, $244 million and $233 million for fiscal years 2020, 2019 and 2018, respectively. Finance lease expense was $14 million for fiscal year 2020.

Table of Contents

Other information related to leases was as follows:

	Fiscal Year Ended November 1, 2020
	(In millions)
Cash paid for operating leases included in operating cash flows	$ 125
ROU assets obtained in exchange for operating lease liabilities	$ 682
ROU assets obtained in exchange for finance lease liabilities	$ 74

	November 1, 2020
Weighted-average remaining lease term – operating leases (In years)	10
Weighted-average remaining lease term – finance leases (In years)	4
Weighted-average discount rate – operating leases	3.80 %
Weighted-average discount rate – finance leases	3.33 %

Supplemental balance sheet information related to leases was as follows:

	Classification on the Consolidated Balance Sheet	November 1, 2020
		(In millions)
ROU assets - operating leases	Other long-term assets	$ 589
ROU assets - finance leases	Property, plant and equipment, net	$ 62
Short-term lease liabilities - operating leases	Other current liabilities	$ 100
Long-term lease liabilities - operating leases	Other long-term liabilities	$ 527
Short-term lease liabilities - finance leases	Current portion of long-term debt	$ 20
Long-term lease liabilities - finance leases	Long-term debt	$ 48

The maturities of lease liabilities were as follows:

	November 1, 2020	
	Operating Leases	Finance Leases
	(In millions)	
2021	$ 120	$ 21
2022	94	17
2023	84	17
2024	65	17
2025	54	—
Thereafter	356	—
Total undiscounted liabilities	773	72
Less: interest	(146)	(4)
Present value of lease liabilities	$ 627	$ 68

As of November 3, 2019, future minimum lease payments under non-cancelable lease liabilities prior to our adoption of Topic 842 were as follows:

	November 3, 2019
	(In millions)
2020	$ 115
2021	99
2022	80
2023	69
2024	47
Thereafter	390
Total minimum lease payments	$ 800

7. Goodwill and Intangible Assets

Goodwill

	Wired Infrastructure	Wireless Communications	Enterprise Storage	Industrial & Other	Semiconductor Solutions	Infrastructure Software	IP Licensing	Total
	(In millions)							
Balance as of November 4, 2018	$17,705	$ 5,945	$3,112	$ 151	$ —	$ —	$ —	$26,913
Reallocation due to change in segments	(17,705)	(5,945)	(3,112)	(151)	25,924	980	9	—
Acquisitions	—	—	—	—	5	9,796	—	9,801
Balance as of November 3, 2019	—	—	—	—	25,929	10,776	9	36,714
Reallocation due to change in segments	—	—	—	—	9	—	(9)	—
Acquisitions	—	—	—	—	35	6,712	—	6,747
Sale of business	—	—	—	—	(14)	—	—	(14)
Balance as of November 1, 2020	$ —	$ —	$ —	$ —	$ 25,959	$17,488	$ —	$43,447

In fiscal years 2020 and 2019, we reassigned goodwill balances among our reportable segments to reflect changes in our segment structure. The fair value of each segment, generally determined using a combination of the income approach and the market approach, is compared to our total fair value immediately prior to the reorganization to reassign goodwill.

During the fourth quarter of fiscal years 2020, 2019, and 2018, we completed our annual impairment assessments and concluded that goodwill was not impaired in any of these years.

Intangible Assets

	Gross Carrying Amount	Accumulated Amortization	Net Book Value
		(In millions)	
As of November 1, 2020:			
Purchased technology	$ 24,119	$ (13,925)	$ 10,194
Customer contracts and related relationships	8,389	(3,179)	5,210
Order backlog	2,579	(1,836)	743
Trade names	797	(322)	475
Other	252	(117)	135
Intangible assets subject to amortization	36,136	(19,379)	16,757
IPR&D	25	—	25
Total	$ 36,161	$ (19,379)	$ 16,782
As of November 3, 2019:			
Purchased technology	$ 20,935	$ (10,113)	$ 10,822
Customer contracts and related relationships	5,978	(1,787)	4,191
Order backlog	2,569	(908)	1,661
Trade names	712	(247)	465
Other	241	(89)	152
Intangible assets subject to amortization	30,435	(13,144)	17,291
IPR&D	263	—	263
Total	$ 30,698	$ (13,144)	$ 17,554

Based on the amount of intangible assets subject to amortization at November 1, 2020, the expected amortization expense for each of the next five fiscal years and thereafter was as follows:

Fiscal Year:	Expected Amortization Expense
	(In millions)
2021	$ 5,418
2022	4,366
2023	3,236
2024	2,365
2025	654
Thereafter	718
Total	$ 16,757

The weighted-average amortization periods remaining by intangible asset category were as follows:

Amortizable intangible assets:	November 1, 2020	November 3, 2019
	(In years)	
Purchased technology	5	5
Customer contracts and related relationships	4	5
Order backlog	2	3
Trade names	9	10
Other	10	10

Table of Contents

8. Net Income Per Share

	Fiscal Year		
	2020	2019	2018
	(In millions, except per share data)		
Numerator:			
Income from continuing operations	$ 2,961	$ 2,736	$ 12,629
Dividends on preferred stock	(297)	(29)	—
Income from continuing operations attributable to noncontrolling interest	—	—	(352)
Income from continuing operations attributable to common stock	2,664	2,707	12,277
Loss from discontinued operations, net of income taxes, attributable to common stock [a]	(1)	(12)	(18)
Net income attributable to common stock	$ 2,663	$ 2,695	$ 12,259
Denominator:			
Weighted-average shares outstanding - basic	402	398	418
Dilutive effect of equity awards	19	21	13
Weighted-average shares outstanding - diluted	421	419	431
Basic income per share attributable to common stock:			
Income per share from continuing operations	$ 6.62	$ 6.80	$ 29.37
Loss per share from discontinued operations	—	(0.03)	(0.04)
Net income per share	$ 6.62	$ 6.77	$ 29.33
Diluted income per share attributable to common stock:			
Income per share from continuing operations	$ 6.33	$ 6.46	$ 28.48
Loss per share from discontinued operations	—	(0.03)	(0.04)
Net income per share	$ 6.33	$ 6.43	$ 28.44
Potentially dilutive shares excluded from the calculation of diluted income per share because their effect would have been antidilutive:			
Preferred Stock [b]	12	1	—
LP Units [c]	—	—	9

(a) Fiscal year 2018 excludes $1 million of loss from discontinued operations, net of income taxes, attributable to noncontrolling interest.

(b) Represents common stock shares issuable upon the conversion of Mandatory Convertible Preferred Stock, as defined in Note 11. "Stockholders' Equity."

(c) Represents common stock shares issuable upon the exchange of LP Units prior to the effective time of the Mandatory Exchange (refer to Note 11. "Stockholders' Equity" for additional information).

9. Retirement Plans and Post-Retirement Benefits

Pension and Post-Retirement Benefit Plans

Defined Benefit Pension Plans. The U.S. defined benefit pension plans primarily consist of a qualified pension plan. Benefits of the qualified pension plan are provided under an adjusted career-average-pay program, a cash-balance program or a dollar-per-month program. Benefit accruals under this plan were frozen in 2009. Participants in the adjusted career-average-pay program no longer earn service accruals. Participants in the cash-balance program no longer earn service accruals, but continue to earn 4% interest per year on their cash-balance accounts. There are no active participants under the dollar-per-month program. We also have a non-qualified supplemental pension plan in the United States that principally provides benefits based on compensation in excess of amounts that can be considered under the qualified pension plan.

We also have defined benefit pension plans for certain employees in Austria, France, Germany, India, Israel, Italy, Japan and Taiwan. Eligibility is generally determined based on the terms of our plans and local statutory requirements.

Post-Retirement Benefit Plans. Certain of our U.S. employees who meet the retirement eligibility requirements as of their termination dates, may receive post-retirement medical benefits under our retiree medical account program. Majority of the eligible employees receive a medical benefit spending account of $55,000 upon retirement to pay premiums for medical coverage through the maximum age of 75 as a retiree.

Our group life insurance plan offers post-retirement life insurance coverage for certain U.S. employees.

Net Periodic Benefit (Income) Cost

	Pension Benefits			Post-Retirement Benefits		
	Fiscal Year			Fiscal Year		
	2020	2019	2018	2020	2019	2018
	(In millions)					
Service cost	$ 12	$ 10	$ 4	$ —	$ —	$ —
Interest cost	45	58	51	3	3	3
Expected return on plan assets	(46)	(59)	(51)	(3)	(3)	(4)
Other	(3)	1	1	1	(1)	—
Net periodic benefit (income) cost	$ 8	$ 10	$ 5	$ 1	$ (1)	$ (1)
Net actuarial (gain) loss	$ (28)	$ 13	$ 14	$ —	$ 11	$ (3)

The components of net periodic benefit (income) cost other than the service cost are included in other income, net.

Funded Status

	Pension Benefits		Post-Retirement Benefits	
	November 1, 2020	November 3, 2019	November 1, 2020	November 3, 2019
	(In millions)			
Change in plan assets:				
Fair value of plan assets — beginning of period	$ 1,539	$ 1,394	$ 85	$ 81
Actual return on plan assets	129	232	5	6
Employer contributions	13	15	1	1
Payments from plan assets	(96)	(94)	(3)	(3)
Foreign currency impact	8	(8)	—	—
Fair value of plan assets — end of period	1,593	1,539	88	85
Change in benefit obligations:				
Benefit obligations — beginning of period	1,553	1,364	93	74
Service cost	12	10	—	—
Interest cost	45	58	3	3
Actuarial loss	61	186	2	14
Benefit payments	(96)	(94)	(3)	(3)
Curtailments	(6)	—	—	—
Benefit obligations assumed in an acquisition	10	37	—	5
Foreign currency impact	9	(8)	—	—
Benefit obligations — end of period	1,588	1,553	95	93
Overfunded (underfunded) status of benefit obligations [(a)]	$ 5	$ (14)	$ (7)	$ (8)
Actuarial losses and prior service costs recognized in accumulated other comprehensive loss, net of taxes	$ (94)	$ (125)	$ (14)	$ (15)

(a) Substantially all amounts recognized in the consolidated balance sheets were recorded in other long-term assets and other long-term liabilities for all periods presented.

Plans with benefit obligations in excess of plan assets:

	Pension Benefits		Post-Retirement Benefits	
	November 1, 2020	November 3, 2019	November 1, 2020	November 3, 2019
	(In millions)			
Projected benefit obligations	$ 82	$ 92	$ —	$ —
Accumulated benefit obligations	$ 68	$ 80	$ 15	$ 16
Fair value of plan assets	$ 11	$ 32	$ —	$ —

Plans with benefit obligations less than plan assets:

	Pension Benefits		Post-Retirement Benefits	
	November 1, 2020	November 3, 2019	November 1, 2020	November 3, 2019
	(In millions)			
Projected benefit obligations	$ 1,506	$ 1,461	$ —	$ —
Accumulated benefit obligations	$ 1,505	$ 1,460	$ 80	$ 77
Fair value of plan assets	$ 1,582	$ 1,507	$ 88	$ 85

The fair value of pension plan assets as of November 1, 2020 and November 3, 2019 included $160 million and $151 million, respectively, of assets for our non-U.S. pension plans.

The projected benefit obligations as of November 1, 2020 and November 3, 2019 included $206 million and $184 million, respectively, of obligations related to our non-U.S. pension plans. The accumulated benefit obligations as of November 1, 2020 and November 3, 2019 included $190 million and $171 million, respectively, of obligations related to our non-U.S. pension plans.

Expected Future Benefit Payments

Fiscal Years:	Pension Benefits	Post-Retirement Benefits
	(In millions)	
2021	$ 94	$ 8
2022	$ 93	$ 4
2023	$ 93	$ 4
2024	$ 93	$ 4
2025	$ 93	$ 4
2026-2030	$ 451	$ 23

Defined Benefit Pension Plan Investment Policy

Plan assets of the funded defined benefit pension plans are generally invested in funds held by third-party fund managers. Our benefit plan investment committee has set the investment strategy to fully match the liability. We direct the overall portfolio allocation and use a third-party investment consultant that has the discretion to structure portfolios and select the investment managers within those allocation parameters. Multiple investment managers are utilized, including both active and passive management approaches. The plan assets are invested using the liability-driven investment strategy intended to minimize market and interest rate risks, and those assets are periodically rebalanced toward asset allocation targets.

Substantially all of the plan assets are for the U.S. qualified pension plan. The target asset allocation for this plan reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plan. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. For both fiscal years 2020 and 2019, 100% of the U. S. qualified pension plan assets were allocated to fixed income, in line with the target allocation. The fixed income allocation is primarily directed toward long-term core bond investments, with smaller allocations to Treasury Inflation-Protected Securities and high-yield bonds.

Table of Contents

Fair Value Measurement of Defined Benefit Pension Plan Assets

	November 1, 2020			
	Fair Value Measurements at Reporting Date Using			
	Level 1	Level 2	Level 3	Total
	(In millions)			
Cash equivalents	$ 42 (a)	$ —	$ —	$ 42
Equity securities:				
Non-U.S. equity securities	26 (b)	—	—	26
Fixed-income securities:				
U.S. treasuries	—	158 (c)	—	158
Corporate bonds	—	1,307 (c)	—	1,307
Municipal bonds	—	22 (c)	—	22
Government bonds	—	36 (c)	—	36
Asset-backed securities	—	2 (c)	—	2
Total plan assets	$ 68	$ 1,525	$ —	$ 1,593

	November 3, 2019			
	Fair Value Measurements at Reporting Date Using			
	Level 1	Level 2	Level 3	Total
	(In millions)			
Cash equivalents	$ 34 (a)	$ —	$ —	$ 34
Equity securities:				
Non-U.S. equity securities	21 (b)	—	—	21
Fixed-income securities:				
U.S. treasuries	—	82 (c)	—	82
Corporate bonds	—	1,372 (c)	—	1,372
Municipal bonds	—	19 (c)	—	19
Government bonds	—	10 (c)	—	10
Asset-backed securities	—	1 (c)	—	1
Total plan assets	$ 55	$ 1,484	$ —	$ 1,539

(a) Cash equivalents primarily included short-term investment funds which consisted of short-term money market instruments that were valued based on quoted prices in active markets.

(b) These equity securities were valued based on quoted prices in active markets.

(c) These amounts consisted of investments that were traded less frequently than Level 1 securities and were valued using inputs that included quoted prices for similar assets in active markets and inputs other than quoted prices that were observable for the assets, such as interest rates, yield curves, prepayment speeds, collateral performance, broker/dealer quotes and indices that were observable at commonly quoted intervals.

Post-Retirement Benefit Plan Investment Policy

Our overall investment strategy for the group life insurance plan is to allocate assets in a manner that seeks to both maximize the safety of promised benefits and minimize the cost of funding those benefits. The target asset allocation for plan assets reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plan. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. We set the overall portfolio allocation and use an investment manager that directs the investment of funds consistent with that allocation. The investment manager invests the plan assets in index funds that it manages. For both fiscal years 2020 and 2019, 100% of plan assets were allocated to commingled funds that invested in fixed income, in line with the target allocation. The fair value of the commingled funds are measured using net asset value per share as a practical expedient.

Assumptions

The assumptions used to determine the benefit obligations and net periodic benefit (income) cost from our defined benefit pension plans and post-retirement benefit plans are presented in the tables below. The expected long-term return on assets shown in the tables below represents an estimate of long-term returns on investment portfolios primarily consisting of combinations of debt, equity and other investments, depending on the plan. The long-term rates of return are then weighted based on the asset classes (both historical and forecasted) in which we expect the pension and post-retirement funds to be invested. Discount rates reflect the current rate at which defined benefit pension and post-retirement benefit obligations could be settled based on the measurement dates of the plans, which is October 31, the month end closest to our fiscal year end. The range of assumptions that are used for defined benefit pension plans reflects the different economic environments within various countries.

	Assumptions for Benefit Obligations as of		Assumptions for Net Periodic Benefit (Income) Cost Fiscal Year		
	November 1, 2020	November 3, 2019	2020	2019	2018
Defined benefit pension plans:					
Discount rate	0.61%-6.54%	0.47%-7.00%	0.47%-7.00%	0.50%-8.00%	0.50%-7.00%
Average increase in compensation levels	2.00%-10.00%	2.00%-10.00%	2.00%-10.00%	1.80%-10.00%	2.00%-11.00%
Expected long-term return on assets	N/A	N/A	1.50%-7.80%	1.50%-7.75%	1.50%-7.50%

	Assumptions for Benefit Obligations as of		Assumptions for Net Periodic Benefit (Income) Cost Fiscal Year		
	November 1, 2020	November 3, 2019	2020	2019	2018
Post-retirement benefit plans:					
Discount rate	2.10%-2.90%	2.80%-3.20%	2.80%-3.20%	4.12%-4.60%	3.40%-3.80%
Average increase in compensation levels	3.00%	3.00%	3.00%	3.00%	3.00%
Expected long-term return on assets	N/A	N/A	3.20%	4.80%	4.80%

	Assumed Health Care Cost Trend Rate Used to Measure the Expected Cost of Benefits as of	
	November 1, 2020	November 3, 2019
Health care cost trend rate assumed for next year	7.25%	4.50%-7.40%
Rate to which the health care cost trend rate is assumed to decline (ultimate health care cost trend rate)	4.50%	3.50%-4.50%
Year that the rate reaches the ultimate health care cost trend rate	2029	2031

A one percentage point increase or decrease in the assumed health care cost trend rates would not have had a material effect on the accumulated post-retirement benefit obligations or service and interest cost components of the net periodic benefit cost for any periods presented.

Defined Contribution Plans

Our eligible U.S. employees participate in a company-sponsored 401(k) plan. Under the plan, we provide matching contributions to employees up to 6% of their eligible earnings. All matching contributions vest immediately. During fiscal years 2020, 2019 and 2018, we made contributions of $99 million, $89 million and $73 million, respectively, to the 401(k) plan.

In addition, other eligible employees outside of the U.S. receive retirement benefits under various defined contribution retirement plans.

10. Borrowings

	November 1, 2020		November 3, 2019	
	Effective Interest Rate	Aggregate Principal Amount	Effective Interest Rate	Aggregate Principal Amount
	(In millions)			
June 2020 Senior Notes - fixed rate				
3.459% notes due September 2026	4.19 %	$ 1,695		$ —
4.110% notes due September 2028	5.02 %	2,222		—
May 2020 Senior Notes- fixed rate				
2.250% notes due November 2023	2.40 %	1,000		—
3.150% notes due November 2025	3.29 %	2,250		—
4.150% notes due November 2030	4.27 %	2,750		—
4.300% notes due November 2032	4.39 %	2,000		—
April 2020 Senior Notes - fixed rate				
4.700% notes due April 2025	4.88 %	2,250		—
5.000% notes due April 2030	5.18 %	2,250		—
November 2019 Term Loans - floating rate				
LIBOR plus 1.125% term loan due November 2022	1.54 %	1,819		—
LIBOR plus 1.250% term loan due November 2024	1.56 %	4,069		—
May 2019 Term Loans - floating rate				
LIBOR plus 1.250% term loan due May 2024		—	3.36 %	800
LIBOR plus 1.375% term loan due May 2026		—	3.45 %	800
April 2019 Senior Notes - fixed rate				
3.125% notes due April 2021	3.61 %	525	3.61 %	2,000
3.125% notes due October 2022	3.53 %	693	3.53 %	1,500
3.625% notes due October 2024	3.98 %	1,044	3.98 %	2,000
4.250% notes due April 2026	4.54 %	2,500	4.54 %	2,500
4.750% notes due April 2029	4.95 %	3,000	4.95 %	3,000
2017 Senior Notes - fixed rate				
2.375% notes due January 2020		—	2.62 %	2,750
2.200% notes due January 2021	2.41 %	282	2.41 %	750
3.000% notes due January 2022	3.21 %	842	3.21 %	3,500
2.650% notes due January 2023	2.78 %	1,000	2.78 %	1,000
3.625% notes due January 2024	3.74 %	1,352	3.74 %	2,500
3.125% notes due January 2025	3.23 %	1,000	3.23 %	1,000
3.875% notes due January 2027	4.02 %	4,800	4.02 %	4,800
3.500% notes due January 2028	3.60 %	1,250	3.60 %	1,250
Assumed CA Senior Notes - fixed rate				
5.375% notes due December 2019		—	3.43 %	750
3.600% notes due August 2022	4.07 %	283	4.07 %	500
4.500% notes due August 2023	4.10 %	250	4.10 %	250
4.700% notes due March 2027	5.15 %	350	5.15 %	350

	November 1, 2020		November 3, 2019	
	Effective Interest Rate	Aggregate Principal Amount	Effective Interest Rate	Aggregate Principal Amount
		(In millions)		
Other borrowings				
Commercial paper		—	2.55 % (a)	1,000
1.375% convertible notes due January 2020		—	0.63 %	37
2.500%- 4.500% senior notes due August 2022 - August 2034	2.59%- 4.55%	22	2.59%- 4.55%	22
Total principal amount outstanding		41,498		33,059
Less: unamortized discount and issuance costs		(504)		(261)
Total debt		$ 40,994		$ 32,798

(a) Represents the weighted average interest rate on outstanding commercial paper.

As of November 1, 2020, $20 million of short-term and $48 million of long-term finance lease liabilities were included in the current portion of long-term debt and long-term debt, respectively.

June 2020 Senior Notes

On June 4, 2020, we completed the settlement of our private offers to exchange $3,742 million of certain series of our outstanding notes maturing between 2021 and 2024, for $1,695 million of new senior notes due 2026 and $2,222 million of new senior notes due 2028 (collectively, the "June 2020 Senior Notes"). As a result of this exchange, we incurred premiums of $177 million. The June 2020 Senior Notes are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by Broadcom Corporation ("BRCM") and Broadcom Technologies Inc. ("BTI"). We may redeem or purchase, in whole or in part, any of the June 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the June 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest. The June 2020 Senior Notes are recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

May 2020 Senior Notes

On May 8, 2020, we issued $8 billion of senior unsecured notes (the "May 2020 Senior Notes"). The May 2020 Senior Notes are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by BRCM and BTI. We may redeem or purchase, in whole or in part, any of the May 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the May 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest. The May 2020 Senior Notes are recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

The net proceeds from this issuance, together with the remaining net proceeds from the issuance of the April 2020 Senior Notes, as defined below, were used to repay an aggregate of $5,424 million of term loans outstanding under the November 2019 Credit Agreement, as defined below, consisting of repayments of $2,712 million of each of our unsecured term A-3 and A-5 facilities and $3 billion of borrowings outstanding under the Revolving Facility, as defined below.

April 2020 Senior Notes

In April 2020, we issued $4.5 billion of senior unsecured notes (the "April 2020 Senior Notes"). The April 2020 Senior Notes are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by BRCM and BTI. We may redeem or purchase, in whole or in part, any of the April 2020 Senior Notes prior to their respective maturities, subject to a specified make-whole premium determined in accordance with the indenture governing the April 2020 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest. The April 2020 Senior Notes are recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

Pursuant to a cash tender offer that we completed on April 23, 2020, we repurchased $2,361 million of our 3.000% notes due January 2022, $1,274 million of our 3.125% notes due April 2021 and $351 million of our 2.200% notes due January 2021 with the net proceeds from the April 2020 Senior Notes. As a result of these repurchases, we incurred premiums of $78 million and wrote off $15 million of unamortized discount and issuance costs, both of which were included in interest expense.

November 2019 Term Loans

On November 4, 2019, in connection with the Symantec Asset Purchase, we entered into a credit agreement (the "November 2019 Credit Agreement"), which provides for a $7,750 million unsecured term A-3 facility and a $7,750 million unsecured term A-5 facility (collectively, the "November 2019 Term Loans"). Interest on our November 2019 Term Loans is based on a floating rate. We used net proceeds from the November 2019 Term Loans to fund the $10.7 billion Symantec Asset Purchase and to repay $750 million principal amount of 5.375% notes due December 2019 and $2,750 million principal amount of 2.375% notes due January 2020, on their respective maturity dates. Our obligations under the November 2019 Credit Agreement are guaranteed on an unsecured basis by BRCM and BTI. During the fiscal year ended November 1, 2020, we repaid an aggregate of $9,612 million of our November 2019 Term Loans, consisting of repayments of $5,931 million and $3,681 million of our unsecured term A-3 and A-5 facilities, respectively, and wrote off $60 million of unamortized discount and issuance costs. As a result of these repayments, all remaining principal payments are due more than one year after November 1, 2020 and were included in long-term debt.

May 2019 Term Loans

In May 2019, we entered into a credit agreement (the "May 2019 Credit Agreement"), which provided for a $2 billion unsecured term A-3 facility, a $2 billion unsecured term A-5 facility and a $2 billion unsecured term A-7 facility (collectively, the "May 2019 Term Loans"). Interest on our May 2019 Term Loans is based on a floating rate. Our obligations under the May 2019 Credit Agreement are guaranteed on an unsecured basis by BRCM, BTI and Broadcom Cayman Finance Limited ("Cayman Finance"), which subsequently merged into BTI during fiscal year 2019 with BTI remaining as the surviving entity.

During fiscal year 2019, we fully repaid our unsecured term A-3 facility of $2 billion and repaid $1.2 billion of each of our unsecured term A-5 and A-7 facilities under the May 2019 Credit Agreement. As a result, we wrote off $22 million of discount and issuance costs, which is included in interest expense. During fiscal year 2020, we repaid an aggregate of $1.6 billion of the May 2019 Term Loans, representing the outstanding balance of the May 2019 Term Loans.

The May 2019 Credit Agreement also provided for a five-year $5 billion unsecured revolving credit facility (the "Revolving Facility"), of which $500 million was available for the issuance of multi-currency letters of credit. The issuance of letters of credit and certain other instruments would reduce the aggregate amount otherwise available under the Revolving Facility for revolving loans. Subject to the terms of the May 2019 Credit Agreement, we are permitted to borrow, repay and reborrow revolving loans at any time prior to the earlier of (a) May 2024 or (b) the date of termination in whole of the revolving lenders' commitments under the May 2019 Credit Agreement in accordance with the terms thereof. As of November 1, 2020 and November 3, 2019, we had no borrowings outstanding under the Revolving Facility.

April 2019 Senior Notes

In April 2019, we issued $11 billion of senior unsecured notes ("April 2019 Senior Notes"). The April 2019 Senior Notes are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by BRCM and BTI. We may redeem or purchase, in whole or in part, any of the April 2019 Senior Notes prior to their respective maturities, subject to a make-whole premium determined in accordance with the indenture governing the April 2019 Senior Notes, plus accrued and unpaid interest. The April 2019 Senior Notes are recorded as long-term debt, net of discount and issuance costs, which are amortized to interest expense over the respective terms of these borrowings.

Exchange Offer

In connection with the issuance of the June 2020 Senior Notes, May 2020 Senior Notes, April 2020 Senior Notes (collectively, the "2020 Senior Notes") and the April 2019 Senior Notes, we entered into registration rights agreements, pursuant to which we were obligated to use commercially reasonable efforts to file with the SEC, and cause to be declared effective, a registration statement with respect to an offer to exchange (the "Exchange Offer") each series of the 2020 Senior Notes and April 2019 Senior Notes for notes that are registered with the U.S. Securities and Exchange Commission (the "SEC") (the "Registered Notes"), with substantially identical terms. On July 6, 2020, we launched the Exchange Offer, which completed on August 10, 2020. Substantially all of our 2020 Senior Notes and April 2019 Senior Notes were tendered and exchanged for the corresponding Registered Notes in the Exchange Offer.

Commercial Paper

In February 2019, we established a commercial paper program pursuant to which we may issue unsecured commercial paper notes ("Commercial Paper") in an aggregate principal amount of up to $2 billion outstanding at any time with maturities of up to 397 days from the date of issue. Commercial Paper is sold under customary terms in the commercial paper market and may be issued at a discount from par or, alternatively, may be sold at par and bear interest at rates dictated by market conditions at the time of their issuance. The Revolving Facility supports our commercial paper program. Outstanding Commercial Paper borrowings reduce the amount that would otherwise be available to borrow for general corporate purposes under the Revolving Facility. We intend to continuously replace our Commercial Paper upon maturity with newly issued commercial paper. In addition, we have the ability to finance the Commercial Paper borrowings on a long-term basis as they are supported by the Revolving Facility. We have recorded Commercial Paper, net of discount, as long-term debt. The discount associated with the Commercial Paper is amortized to interest expense over its term. As of November 1, 2020, we had no Commercial Paper outstanding. We had $1 billion of Commercial Paper outstanding as of November 3, 2019 with maturities generally less than sixty days.

2017 Senior Notes

During the fiscal year ended October 29, 2017, BRCM and Cayman Finance issued $17,550 million of senior unsecured notes (the "2017 Senior Notes"). Our 2017 Senior Notes are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by Broadcom and BTI. We may redeem or purchase, in whole or in part, any of the 2017 Senior Notes prior to their respective maturities, subject to a make-whole premium determined in accordance with the indenture governing the 2017 Senior Notes, plus accrued and unpaid interest. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest.

During fiscal year 2018, substantially all of the 2017 Senior Notes were tendered and exchanged for notes registered with the SEC, with substantially identical terms.

Assumed CA Senior Notes

In connection with our acquisition of CA, we assumed $2,250 million in aggregate principal amount of CA's outstanding senior unsecured notes (the "Assumed CA Senior Notes"). CA remains the sole obligor under the Assumed CA Senior Notes. We may redeem all or a portion of the Assumed CA Senior Notes at any time, subject to a specified make-whole premium as set forth with the indenture governing the Assumed CA Senior Notes. In the event of a change in control, note holders will have the right to require us to repurchase their notes at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest. During fiscal year 2019, we fully repaid $400 million of our 3.600% notes due August 2020.

Assumed Brocade Convertible Notes

As a result of our acquisition of Brocade, we assumed $575 million in aggregate principal amount of Brocade's 1.375% convertible senior unsecured notes (the "Assumed Brocade Convertible Notes"). During fiscal year 2018, we repurchased $537 million in aggregate principal amount for $548 million at a conversion rate of $1,018 for each $1,000 of principal surrendered for conversion. We fully repaid the remaining $37 million of the Assumed Brocade Convertible Notes during fiscal year 2020.

Fair Value of Debt

As of November 1, 2020, the estimated aggregate fair value of our debt was $45,274 million. The fair value of our senior notes was determined using quoted prices from less active markets. The estimated fair value of our November 2019 Term Loans approximated the carrying value due to their floating interest rates and consistency in our credit ratings. All of our debt obligations are categorized as Level 2 instruments.

Future Principal Payments of Debt

The future scheduled principal payments of debt as of November 1, 2020 were as follows:

Fiscal Year:	Future Scheduled Principal Payments
	(In millions)
2021	$ 807
2022	1,827
2023	3,069
2024	3,403
2025	7,319
Thereafter	25,073
Total	$ 41,498

As of November 1, 2020 and November 3, 2019, we accrued interest payable of $304 million and $214 million, respectively, and were in compliance with all debt covenants.

11. Stockholders' Equity

Mandatory Convertible Preferred Stock Offering

On September 30, 2019, we completed an offering of approximately 4 million shares of 8.00% Mandatory Convertible Preferred Stock, Series A, $0.001 par value per share ("Mandatory Convertible Preferred Stock"), which generated net proceeds of approximately $3,679 million.

The holders of Mandatory Convertible Preferred Stock are entitled to receive, when, as and if declared by our Board of Directors, or an authorized committee thereof, out of funds legally available for payment, cumulative dividends at the annual rate of 8.00% of the liquidation preference of $1,000 per share (equivalent to $80 annually per share), payable in cash or, subject to certain limitations, by delivery of shares of our common stock or any combination of cash and shares of our common stock, at our election; provided, however, that any undeclared and unpaid dividends will continue to accumulate.

Subject to limited exceptions, no dividends may be declared or paid on shares of our common stock, unless all accumulated dividends have been paid or set aside for payment on all outstanding shares of our Mandatory Convertible Preferred Stock for all past completed dividend periods. In the event of our voluntary or involuntary liquidation, dissolution or winding-up, no distribution of our assets may be made to holders of our common stock until we have paid to holders of our Mandatory Convertible Preferred Stock a liquidation preference equal to $1,000 per share plus accumulated and unpaid dividends.

On September 30, 2022, unless earlier converted, each outstanding share of Mandatory Convertible Preferred Stock will automatically convert into shares of our common stock at a rate between the then minimum and maximum conversion rates. At any time prior to September 30, 2022, holders may elect to convert each share of Mandatory Convertible Preferred Stock into shares of our common stock at the then minimum conversion rate. The conversion rates are subject to anti-dilution adjustments. As of November 1, 2020, the minimum conversion rate was 3.0567 and the maximum conversion rate was 3.5729.

We recognized $27 million and $29 million of accrued preferred stock dividends, which were presented as temporary equity in our consolidated balance sheets as of November 1, 2020 and November 3, 2019, respectively.

Redomiciliation Transaction

For the period prior to the Redomiciliation Transaction, our stockholders' equity reflected Broadcom-Singapore's outstanding ordinary shares. On April 4, 2018, all Broadcom-Singapore outstanding ordinary shares were exchanged on a one-for-one basis for newly issued shares of Broadcom common stock and Broadcom-Singapore became a wholly-owned subsidiary of Broadcom.

In conjunction with the Redomiciliation Transaction and pursuant to the Mandatory Exchange, all outstanding LP Units held by the limited partners were mandatorily exchanged for approximately 22 million newly issued shares of Broadcom common stock on a one-for-one basis. As a result, all limited partners of the Partnership became common stockholders of Broadcom. In addition, all related outstanding special preference shares of Broadcom-Singapore were automatically redeemed upon the Mandatory Exchange.

Noncontrolling Interest

Immediately prior to the Redomiciliation Transaction, the limited partners held a noncontrolling interest of approximately 5% in the Partnership through their ownership of LP Units. Accordingly, net income attributable to our common stock in our consolidated statement of operations for fiscal year 2018 excluded the noncontrolling interest's proportionate share of our results prior to the Redomiciliation Transaction. In addition, we presented the proportionate share of equity attributable to the noncontrolling interest as a separate component of total equity within our consolidated statements of equity for the period prior to the Redomiciliation Transaction.

Cash Dividends and Distributions Declared and Paid

	Fiscal Year		
	2020	2019	2018
	(In millions, except per share/unit data)		
Dividends per share to common stockholders	$ 13.00	$ 10.60	$ 7.00
Dividends to common stockholders	$ 5,235	$ 4,235	$ 2,921
Dividends per share to preferred stockholders	$ 80.00	$ —	$ —
Dividends to preferred stockholders	$ 299	$ —	$ —
Distributions per unit to limited partners	$ —	$ —	$ 3.50
Distributions to limited partners	$ —	$ —	$ 77

Stock Repurchase Program

Pursuant to an $18 billion stock repurchase program previously authorized by our Board of Directors, we repurchased and retired approximately 21 million and 32 million shares of our common stock for $5,435 million and $7,258 million during fiscal years 2019 and 2018, respectively. This authorization ended on November 3, 2019.

Equity Incentive Award Plans

Stock-based incentive awards are provided to employees and directors under the terms of various Broadcom equity incentive plans.

2009 Plan

In July 2009, our Board of Directors adopted, and our stockholders approved, the Avago Technologies Limited 2009 Equity Incentive Award Plan (the "2009 Plan") to authorize the grant of options, stock appreciation rights, RSUs, dividend equivalents, performance awards, and other stock-based awards. A total of 20 million shares of common stock were initially reserved for issuance under the 2009 Plan, subject to annual increases starting in fiscal year 2012. The amount of the annual increase was equal to the least of (a) 6 million shares, (b) 3% of the common stock outstanding on the last day of the immediately preceding fiscal year and (c) such smaller number of common stock as determined by our Board. However, no more than 90 million shares of common stock may be issued upon the exercise of equity awards issued under the 2009 Plan. The 2009 Plan became effective on July 27, 2009.

Options issued to employees under the 2009 Plan prior to March 2011 generally expire ten years following the date of grant. Since March 2011, options issued to employees under the 2009 Plan generally expire seven years after the date of grant. Options awarded to non-employees under this plan generally expire after five years. Options issued to both employees and non-employees under the 2009 Plan generally vested over a period of four years from the date of grant and were granted with an exercise price equal to the fair market value on the date of grant. Any stock options cancelled or forfeited after July 27, 2009 under the equity incentive plans adopted prior to the 2009 Plan became available for issuance under the 2009 Plan. RSU awards granted to employees under the 2009 Plan generally vest annually over four years.

The 2009 Plan expired in July 2019.

2003 Plan

In connection with the acquisition of LSI Corporation ("LSI"), we assumed the LSI 2003 Equity Incentive Plan (the "2003 Plan") and outstanding unvested stock options and RSUs originally granted by LSI under the 2003 Plan that were held by continuing employees. Under the 2003 Plan, we may grant to former employees of LSI and other employees who were not employees of Broadcom at the time of the acquisition restricted stock awards, RSUs, stock options and stock appreciation rights with an exercise price that is no less than the fair market value on the date of grant. No participant may be granted stock options covering more than 4 million shares or more than an aggregate of 1 million shares of restricted stock and RSUs in any fiscal year. Equity awards granted under the 2003 Plan following the LSI acquisition are on similar terms and consistent with similar grants made pursuant to the 2009 Plan. As of November 1, 2020, 3 million shares remained available for issuance under the 2003 Plan.

2012 Plan

In connection with the acquisition of BRCM, we assumed the BRCM 2012 Stock Incentive Plan (the “2012 Plan”) and outstanding unvested RSUs originally granted by BRCM under the 2012 Plan that were held by continuing employees. Under the 2012 Plan, we may grant to former employees of BRCM and other employees who were not employees of Broadcom at the time of the acquisition restricted stock awards, RSUs, stock options and stock appreciation rights with an exercise price that is no less than the fair market value on the date of grant. No participant may be granted stock options, restricted stock or

RSUs, covering more than an aggregate of 4 million shares in any fiscal year. Equity awards granted under the 2012 Plan following the acquisition of BRCM are on similar terms and consistent with similar grants made pursuant to the 2009 Plan. As of November 1, 2020, 95 million shares remained available for issuance under the 2012 Plan. The number of shares available for issuance under the 2012 Plan is subject to an annual increase of 12 million shares.

We also grant market-based RSUs with both a service condition and a market condition as part of our equity compensation programs. The market-based RSUs generally vest over four years, subject to satisfaction of market conditions. During fiscal years 2020, 2019 and 2018, we granted market-based RSUs under which grantees may receive the number of shares ranging from 0% to 200% of the original grant at vesting based upon the total stockholder return ("TSR") on our common stock as compared to the TSR of an index group of companies.

Amendment to the RSU Vesting Schedule

During fiscal year 2019, the Compensation Committee of our Board of Directors approved an amendment to the vesting of time-based RSUs (other than those assumed in an acquisition), held by approximately 16,500 employees below the vice president level, from an annual vesting cycle to a quarterly vesting cycle.

Employee Stock Purchase Plan

The ESPP provides eligible employees with the opportunity to acquire an ownership interest in us through periodic payroll deductions, based on a 6-month look-back period, at a price equal to the lesser of 85% of the fair market value of our common stock at either the beginning or the end of the relevant offering period. The ESPP is structured as a qualified employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986. However, the ESPP is not intended to be a qualified pension, profit sharing or stock bonus plan under Section 401(a) of the Internal Revenue Code of 1986 and is not subject to the provisions of the Employee Retirement Income Security Act of 1974.

Stock-Based Compensation Expense

	Fiscal Year		
	2020	2019	2018
		(In millions)	
Cost of products sold	$ 109	$ 120	$ 77
Cost of subscriptions and services	50	43	9
Research and development	1,419	1,532	855
Selling, general and administrative	398	490	286
Total stock-based compensation expense [(a)]	$ 1,976	$ 2,185	$ 1,227
Estimated income tax benefits for stock-based compensation	$ 345	$ 400	$ 195
Income tax benefits for stock-based awards exercised or released	$ 147	$ 232	$ 181

(a) Fiscal year 2019 stock-based compensation expense does not include $75 million restructuring charges for accelerated vesting of assumed equity awards held by employees terminated in connection with the CA Merger.

We have assumed an annualized forfeiture rate for RSUs of 5%. We will recognize additional expense if actual forfeitures are lower than we estimated, and will recognize a benefit if actual forfeitures are higher than we estimated.

During the first quarter of fiscal year 2019, the Compensation Committee of our Board of Directors approved a broad-based program of multi-year equity grants of time- and market-based RSUs (the "Multi-Year Equity Awards") in lieu of our annual employee equity awards historically granted on March 15 of each year. Each Multi-Year Equity Award vests on the same basis as four annual grants made March 15 of each year, beginning in fiscal year 2019, with successive four-year vesting periods. Stock-based compensation expense related to the Multi-Year Equity Awards was $902 million and $890 million for fiscal years 2020 and 2019, respectively.

In connection with the amendment to the vesting of certain time-based RSUs from an annual cycle to a quarterly cycle, we recognized approximately $140 million in incremental compensation cost during fiscal year 2019.

As of November 1, 2020, the total unrecognized compensation cost related to unvested stock-based awards was $4,021 million, which is expected to be recognized over the remaining weighted-average service period of 3.4 years.

The following table summarizes the weighted-average assumptions utilized to calculate the fair value of market-based awards granted in the periods presented:

	Market-Based Awards		
	Fiscal Year		
	2020	2019	2018
Risk-free interest rate	1.2 %	2.7 %	2.4 %
Dividend yield	4.7 %	4.4 %	2.6 %
Volatility	31.2 %	33.0 %	32.5 %
Expected term (in years)	4.0	4.0	4.0

The risk-free interest rate was derived from the average U.S. Treasury Strips rate, which approximated the rate in effect appropriate for the term at the time of grant.

The dividend yield was based on the historical and expected dividend payouts as of the respective award grant dates.

The volatility was based on our own historical stock price volatility over the period commensurate with the expected life of the awards and the implied volatility of a 180-day call option on our own common stock measured at a specific date.

The expected term was commensurate with the awards' contractual terms.

Restricted Stock Unit Awards

A summary of time- and market-based RSU activity is as follows:

	Number of RSUs Outstanding	Weighted-Average Grant Date Fair Value Per Share
	(In millions, except per share data)	
Balance as of October 29, 2017	18	$ 163.42
Granted	7	$ 239.48
Vested	(6)	$ 155.78
Forfeited	(1)	$ 175.46
Balance as of November 4, 2018	18	$ 195.50
Assumed in CA Merger	1	$ 206.14
Granted	33	$ 183.64
Vested	(10)	$ 192.28
Forfeited	(2)	$ 182.80
Balance as of November 3, 2019	40	$ 188.52
Granted	3	$ 252.36
Vested	(8)	$ 210.84
Forfeited	(3)	$ 198.17
Balance as of November 1, 2020	32	$ 188.35

The aggregate fair value of time- and market-based RSUs that vested in fiscal years 2020, 2019 and 2018 was $2,254 million, $2,958 million and $1,516 million, respectively, which represents the market value of our common stock on the date that the RSUs vested. The number of RSUs vested included shares of common stock that we withheld for settlement of employees' tax obligations due upon the vesting of RSUs.

[Table of Contents](#)

Stock Option Awards

A summary of time- and market-based stock option activity is as follows:

	Number of Options Outstanding	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Life (In years)	Aggregate Intrinsic Value
	(In millions, except years and per share data)			
Balance as of October 29, 2017	10	$ 49.54		
Exercised	(2)	$ 47.41		$ 534
Cancelled	— *	$ 72.37		
Balance as of November 4, 2018	8	$ 50.14		
Exercised	(4)	$ 47.88		$ 761
Cancelled	— *	$ 49.00		
Balance as of November 3, 2019	4	$ 51.83		
Exercised	(3)	$ 49.05		$ 917
Balance as of November 1, 2020	1	$ 62.35	0.4	$ 266
Fully vested as of November 1, 2020	1	$ 62.39	0.4	$ 264
Fully vested and expected to vest as of November 1, 2020	1	$ 62.35	0.4	$ 266

* Represents fewer than 0.5 million shares.

12. Income Taxes

Components of Income from Continuing Operations Before Income Taxes

The following table presents the components of income from continuing operations before income taxes for financial reporting purposes:

	Fiscal Year		
	2020	2019	2018
	(In millions)		
Domestic loss	$ (4,221)	$ (4,116)	$ (705)
Foreign income	6,664	6,342	5,250
Income from continuing operations before income taxes	$ 2,443	$ 2,226	$ 4,545

Components of Benefit from Income Taxes

The benefit from income taxes in fiscal year 2020 was primarily due to jurisdictional mix of income and expense, the recognition of gross uncertain tax benefits as a result of lapses of statutes of limitations, the remeasurement of certain foreign deferred tax assets and liabilities, and excess tax benefits from stock-based awards.

The benefit from income taxes in fiscal year 2019 was primarily due to excess tax benefits from stock-based awards, the recognition of gross unrecognized tax benefits as a result of audit settlements and lapses of statutes of limitations net of increases in balances related to tax positions taken during the year, deferred tax remeasurement in state and foreign jurisdictions, internal reorganizations, and the partial release of our valuation allowance as a result of the CA Merger, partly offset by a change in estimate of our fiscal year 2018 provision resulting from regulations issued related to the U.S. Tax Cuts and Jobs Act (“2017 Tax Reform Act”).

The benefit from income taxes in the fiscal year 2018 was primarily due to income tax benefits recognized from the enactment of the 2017 Tax Reform Act and as a result of our redomiciliation to the United States on April 4, 2018.

We have obtained several tax incentives from the Singapore Economic Development Board which provide that qualifying income earned in Singapore is subject to tax incentives or reduced rates of Singapore income tax. Each tax incentive is separate and distinct from the others and may be granted, withheld, extended, modified, truncated, complied with, or terminated independently without any effect on the other incentives. Subject to our compliance with the conditions specified in these incentives and legislative developments, the Singapore tax incentive is scheduled to expire in November 2025.

We have also obtained a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. The tax holiday that we negotiated in Malaysia is also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with any such conditions specified, we will lose the related tax benefits and we could be required to refund previously realized material tax benefits.

Before taking into consideration the effects of the 2017 Tax Reform Act and other indirect tax impacts, the effect of these tax incentives and tax holiday was to increase the benefit from income taxes by approximately $833 million, $923 million and $590 million for fiscal years 2020, 2019 and 2018, respectively.

Significant components of benefit from income taxes are as follows:

	Fiscal Year		
	2020	2019	2018
		(In millions)	
Current tax expense (benefit from):			
Federal	$ 7	$ (49)	$ 255
State	51	(16)	38
Foreign	506	342	171
	564	277	464
Deferred tax expense (benefit from):			
Federal	(627)	(497)	(8,666)
State	(161)	(113)	(103)
Foreign	(294)	(177)	221
	(1,082)	(787)	(8,548)
Total benefit from income taxes	$ (518)	$ (510)	$ (8,084)

Rate Reconciliation

	Fiscal Year		
	2020	2019	2018
Statutory tax rate	21.0 %	21.0 %	21.0 %
State, net of federal benefit	(3.6)	(4.6)	(1.1)
2017 Tax Reform Act	—	5.1	(159.0)
Redomiciliation transaction withholding tax remeasurement	—	—	(25.6)
Foreign income taxed at different rates	(48.6)	(52.5)	(16.3)
Deemed inclusion of foreign earnings	21.8	25.9	4.7
Deferred taxes on unremitted foreign earnings	(1.1)	1.9	0.4
Excess tax benefits from stock-based compensation	(6.0)	(10.4)	(4.0)
Research and development credit	(4.3)	(7.6)	(2.9)
Other, net	(0.4)	(1.7)	4.9
Effective tax rate on income before income taxes	(21.2)%	(22.9)%	(177.9)%

Table of Contents

Summary of Deferred Income Taxes

	November 1, 2020	November 3, 2019
	(In millions)	
Deferred income tax assets:		
Net operating loss, credit and other carryforwards	$ 1,773	$ 1,733
Deferred revenue	529	316
Employee stock awards	273	218
Other deferred income tax assets	392	313
Gross deferred income tax assets	2,967	2,580
Less: valuation allowance	(1,707)	(1,563)
Deferred income tax assets	1,260	1,017
Deferred income tax liabilities:		
Depreciation and amortization	1,477	2,360
Foreign earnings not indefinitely reinvested	112	138
Deferred income tax liabilities	1,589	2,498
Net deferred income tax liabilities	$ (329)	$ (1,481)

Deferred income taxes reflect the net effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their basis for income tax purposes and the tax effects of net operating losses and tax credit carryforwards. The decrease in net deferred income tax liabilities was primarily a result of the amortization of acquisition-related intangible assets included in the consolidated statement of operations.

In connection with the Symantec Asset Purchase in November 2019, we established $28 million of net deferred tax assets primarily as a result of the difference in book basis and tax basis related to acquired assets. In connection with the CA Merger in November 2018, we established $2,434 million of net deferred tax liabilities on the excess of the book basis over the tax basis of acquired identified intangible assets and investments in certain foreign subsidiaries that had not been indefinitely reinvested, partially offset by acquired tax attributes.

We continue to indefinitely reinvest $2,677 million of certain accumulated foreign earnings. The unrecognized deferred income tax liability related to these earnings is estimated to be $281 million. All other current and future earnings of all our foreign subsidiaries are not considered permanently reinvested.

The following table presents net deferred income tax assets (liabilities) as reflected on the consolidated balance sheets:

	November 1, 2020	November 3, 2019
	(In millions)	
Other long-term assets	$ 240	$ 50
Other long-term liabilities	(569)	(1,531)
Net long-term income tax liabilities	$ (329)	$ (1,481)

The increase in the valuation allowance to $1,707 million in fiscal year 2020 from $1,563 million in fiscal year 2019 was primarily due to federal and state deferred tax assets arising from credits and net operating loss carryforwards not expected to be realized.

As of November 1, 2020, we had U.S. federal net operating loss carryforwards of $67 million, U.S. state net operating loss carryforwards of $2,951 million and other foreign net operating loss carryforwards of $1,126 million. U.S. federal and state net operating loss carryforwards begin to expire in our fiscal year ending October 31, 2021 ("fiscal year 2021"). The other foreign net operating losses expire in various fiscal years beginning 2021. As of November 1, 2020, we had $301 million and $1,759 million of U.S. federal and state research and development tax credits, respectively, which if not utilized, begin to expire in fiscal year 2021.

The U.S. Tax Reform Act of 1986 limits the use of net operating loss and tax credit carryforwards in the case of an "ownership change" of a corporation or separate return loss year limitations. Any ownership changes, as defined, may restrict the utilization of carryforwards. As of November 1, 2020, we had approximately $67 million of federal net operating loss carryforwards in the U.S. subject to an annual limitation. We do not expect these limitations to result in any permanent loss of our tax benefits.

Uncertain Tax Positions

Gross unrecognized tax benefits increased by $326 million during fiscal year 2020, resulting in gross unrecognized tax benefits of $4,748 million as of November 1, 2020.

Gross unrecognized tax benefits increased by $392 million during fiscal year 2019, resulting in gross unrecognized tax benefits of $4,422 million as of November 3, 2019.

Gross unrecognized tax benefits increased by $1,774 million during fiscal year 2018, resulting in gross unrecognized tax benefits of $4,030 million as of November 4, 2018. The increase in gross unrecognized tax benefits was primarily due to the recognition of unrecognized tax positions of $1,112 million related to the transition tax on the mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations, offset by a reduction of our federal deferred income tax liabilities on accumulated non-U.S. earnings. The increase in gross unrecognized tax benefits was also as a result of our redomiciliation to the United States on April 4, 2018, and to a lesser extent, the Brocade Merger.

We recognize interest and penalties related to unrecognized tax benefits within the benefit from income taxes. Accrued interest and penalties were included within other long-term liabilities. During fiscal years 2020 and 2018, we recognized interest and penalties of $37 million and $59 million, respectively, within the benefit from income taxes. There was no amount recognized during fiscal year 2019. As of November 1, 2020 and November 3, 2019, the combined amount of cumulative accrued interest and penalties was approximately $340 million and $303 million, respectively.

The following table reconciles the beginning and ending balance of gross unrecognized tax benefits:

	Fiscal Year		
	2020	**2019**	**2018**
		(In millions)	
Beginning balance	$ 4,422	$ 4,030	$ 2,256
Lapses of statutes of limitations	(95)	(36)	(20)
Increases in balances related to tax positions taken during prior periods (including those related to acquisitions made during the year)	98	467	361
Decreases in balances related to tax positions taken during prior periods	(14)	(270)	(289)
Increases in balances related to tax positions taken during current period	379	460	1,726
Decreases in balances related to settlements with taxing authorities	(42)	(229)	(4)
Ending balance	$ 4,748	$ 4,422	$ 4,030

A portion of our unrecognized tax benefits will affect our effective tax rate if they are recognized upon favorable resolution of the uncertain tax positions. As of November 1, 2020 and November 3, 2019, approximately $5,088 million and $4,725 million of the unrecognized tax benefits and accrued interest and penalties would affect our effective tax rate, respectively.

We are subject to U.S. income tax examination for fiscal years 2013 and later. Certain of our acquired companies are subject to tax examinations in major jurisdictions outside of the U.S. for fiscal years 2008 and later. It is possible that our existing unrecognized tax benefits may change up to $261 million as a result of lapses of the statute of limitations for certain audit periods and/or audit examinations expected to be completed within the next 12 months.

13. Segment Information

Reportable Segments

During the first quarter of fiscal year 2020, we updated our organizational structure resulting in two reportable segments: semiconductor solutions and infrastructure software. Each segment represents a component for which separate financial information is available that is utilized on a regular basis by the CODM in determining how to allocate resources and evaluate performance. The reportable segments are determined based on several factors including, but not limited to, customer base, homogeneity of products, technology, delivery channels and similar economic characteristics.

Semiconductor solutions. We provide semiconductor solutions for managing the movement of data in data center, telecom, enterprise and embedded networking applications. We provide a broad variety of radio frequency semiconductor devices, wireless connectivity solutions and custom touch controllers for mobile applications. We also provide semiconductor solutions for enabling the set-top box and broadband access markets and for enabling secure movement of digital data to and from host machines, such as servers, personal computers and storage systems, to the underlying storage devices, such as hard disk drives and solid state drives. We also provide a broad variety of products for the general industrial and automotive markets. Our semiconductor solutions segment also includes our IP licensing.

Infrastructure software. We provide a portfolio of mainframe, enterprise and storage area networking solutions, which enables customers to leverage the benefits of agility, automation, insights, resiliency and security in managing business processes and technology investments, and to reduce the cost and complexity of managing business information within a shared storage environment. We also offer a cyber security solutions portfolio, including data loss prevention, endpoint protection, and web, email and cloud security solutions.

Our CODM assesses the performance of each segment and allocates resources to each segment based on net revenue and operating results and does not evaluate each segment using discrete asset information. Operating results by segment include items that are directly attributable to each segment and also include shared expenses such as global operations, including manufacturing support, logistics and quality control, expenses associated with selling, general and administrative activities, facilities and information technology expenses. Shared expenses are primarily allocated based on revenue and headcount.

During the fourth quarter of our fiscal year 2020, we refined our allocation methodology for certain selling, general and administrative expenses to more closely align these costs with the segment benefiting from the shared expenses. Prior period segment results have been recast to conform to the current presentation.

Unallocated Expenses

Unallocated expenses include amortization of acquisition-related intangible assets, stock-based compensation expense, restructuring, impairment and disposal charges, acquisition-related costs, charges related to inventory step-up to fair value, and other costs, which are not used in evaluating the results of, or in allocating resources to, our segments. Acquisition-related costs also include transaction costs and any costs directly related to the acquisition and integration of acquired businesses.

Depreciation expense directly attributable to each reportable segment is included in operating results for each segment. However, the CODM does not evaluate depreciation expense by operating segment and, therefore, it is not separately presented. There was no inter-segment revenue for any of the periods presented. The accounting policies of the segments are the same as those described in the summary of significant accounting policies.

	Fiscal Year		
	2020	**2019**	**2018**
		(In millions)	
Net revenue:			
Semiconductor solutions	$ 17,267	$ 17,441	$ 19,068
Infrastructure software	6,621	5,156	1,780
Total net revenue	$ 23,888	$ 22,597	$ 20,848
Operating income:			
Semiconductor solutions	$ 8,576	$ 8,538	$ 9,253
Infrastructure software	4,363	3,391	1,157
Unallocated expenses	(8,925)	(8,485)	(5,275)
Total operating income	$ 4,014	$ 3,444	$ 5,135

Geographic Information

Net revenue by country is based on the geographic shipment or delivery location as specified by the distributors, OEMs, contract manufacturers, channel partners, or software customers who purchased our products or services. For the majority of our products, title and control transfer to our customers in Penang, Malaysia. The products are then transported to the customer specific locations. Net revenue from the United States for fiscal years 2020, 2019 and 2018 was $4,778 million, $4,235 million and $2,697 million, respectively. Net revenue from China (including Hong Kong) for fiscal years 2020, 2019 and 2018 was $7,808 million, $8,056 million and $10,305 million, respectively. Net revenue from Singapore for fiscal year 2019 was $2,507 million (amounts were less than 10% for fiscal years 2020 and 2018). Net revenue from other foreign countries for fiscal years 2020, 2019 and 2018 was $11,302 million, $7,799 million and $7,846 million, respectively. These geographic delivery locations are not necessarily indicative of the geographic location of our end customers or the country in which our end customers sell devices containing our products. For example, we believe a substantial portion of our products shipped or delivered to China (including Hong Kong) is included in devices sold by our end customers in the United States and Europe.

Long-lived assets include property, plant and equipment and are based on the physical location of the assets.

	November 1, 2020	November 3, 2019
	(In millions)	
Long-lived assets:		
United States	$ 1,659	$ 1,763
Taiwan	285	258
Other	565	544
Total long-lived assets	$ 2,509	$ 2,565

Significant Customer Information

We sell our products through our direct sales force and a select network of distributors and channel partners globally. No customer accounted for 10% or more of our net accounts receivable balance at November 1, 2020 compared with one customer which accounted for 24% of our net accounts receivable balance at November 3, 2019. During fiscal years 2020 and 2019, one customer accounted for 13% and 17% of our net revenue, respectively. Revenue from this customer was included in our semiconductor solutions segment. During fiscal year 2018, no customer accounted for 10% or more of our net revenue.

14. Commitments and Contingencies

Commitments

The following table summarizes contractual obligations and commitments as of November 1, 2020:

Fiscal Year:	Purchase Commitments	Other Contractual Commitments
	(In millions)	
2021	$ 894	$ 248
2022	72	221
2023	—	209
2024	—	157
2025	—	63
Thereafter	—	239
Total	$ 966	$ 1,137

Purchase Commitments. Represents unconditional purchase obligations that include agreements to purchase goods or services, primarily inventory, that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable price provisions, and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty. Cancellation for outstanding purchase orders for capital expenditures in connection with construction of our new campuses is generally allowed but requires payment of all costs incurred through the date of cancellation and, therefore, cancelable purchase orders for these capital expenditures are included in the table above.

Other Contractual Commitments. Represents amounts payable pursuant to agreements related to IT, human resources, and other service agreements.

Due to the inherent uncertainty with respect to the timing of future cash outflows associated with our unrecognized tax benefits at November 1, 2020, we are unable to reliably estimate the timing of cash settlement with the respective taxing authorities. Therefore, $3,185 million of unrecognized tax benefits and accrued interest classified within other long-term liabilities as of November 1, 2020 have been excluded from the contractual obligations table above.

Standby Letters of Credit

As of November 1, 2020 and November 3, 2019, we had standby letters of credit of $65 million and $62 million, respectively. Standby letters of credit are financial guarantees provided by third parties for leases, customs, taxes and certain self-insured risks. If the guarantees are called, we must reimburse the provider of the guarantees.

Contingencies

From time to time, we are involved in litigation that we believe is of the type common to companies engaged in our lines of business, including commercial disputes, employment issues, tax disputes and disputes involving claims by third parties that our activities infringe their patent, copyright, trademark or other IP rights, as well regulatory investigations or inquiries. Legal proceedings and regulatory investigations or inquiries are often complex, may require the expenditure of significant funds and other resources, and the outcome of such proceedings is inherently uncertain, with material adverse outcomes possible. IP property claims generally involve the demand by a third-party that we cease the manufacture, use or sale of the allegedly infringing products, processes or technologies and/or pay substantial damages or royalties for past, present and future use of the allegedly infringing IP. Claims that our products or processes infringe or misappropriate any third-party IP rights (including claims arising through our contractual indemnification of our customers) often involve highly complex, technical issues, the outcome of which is inherently uncertain. Moreover, from time to time, we pursue litigation to assert our IP rights. Regardless of the merit or resolution of any such litigation, complex IP litigation is generally costly and diverts the efforts and attention of our management and technical personnel.

Lawsuits Relating to California Institute of Technology

California Institute of Technology ("Caltech") filed a complaint against Broadcom and Apple Inc. on May 26, 2016 in the United States District Court for the Central District of California (the "U.S. Central District Court"), and an amended complaint adding Cypress Semiconductor Corporation as a defendant on August 15, 2016. The amended complaint alleged that chips that support certain error correction codes as specified in IEEE Standards 802.11n and 802.11ac willfully infringed four patents related to error correction coding: U.S. Patent Nos. 7,116,710; 7,421,032; 7,916,781; and 8,284,833 ("'833 patent"). Prior to trial, Caltech dismissed its claims against Cypress and withdrew its infringement allegations as to '833 patent. The complaint sought a preliminary and permanent injunction, damages, pre- and post-judgment interest, as well as attorneys' fees, costs, and expenses. The trial was held in January 2020, and on January 29, 2020, the jury issued its verdict finding infringement and awarding Caltech past damages of $270.2 million from Broadcom and $837.8 million from Apple, for which Apple is seeking indemnification from Broadcom. On August 3, 2020, the U.S. Central District Court issued its judgment, awarding Caltech past damages in the amounts awarded by the jury, as well as pre- and post-judgment interest. Additionally, the U.S. Central District Court awarded Caltech an unspecified amount of ongoing royalties to be determined after the anticipated appeals process is resolved. Neither the jury nor the U.S. Central District Court found willful infringement, which if it had, could have resulted in enhanced damages up to three times the amount awarded. Broadcom and Apple have appealed to the United States Court of Appeals for the Federal Circuit.

We believe that the evidence and the law do not support the U.S. Central District Court's findings of infringement or the award of damages, including ongoing royalties, and do not believe a material loss is probable at this time. We believe that there are strong grounds for appeal, and we intend to vigorously challenge the U.S. Central District Court's judgment and rulings. As a result, we have not recorded a reserve with respect to this litigation, in accordance with the applicable accounting standards. We believe the low end of the possible range of loss is zero, but we cannot reasonably estimate the ultimate outcome, as a number of factors (including the appeal by Broadcom and Apple) could significantly change the assessment of damages.

Lawsuits Relating to the Acquisition of Emulex Corporation

On April 8, 2015, a putative class action complaint was filed in the U.S. Central District Court, entitled Gary Varjabedian, et al. v. Emulex Corporation, et al., No. 8:15-cv-554-CJC-JCG. The complaint names as defendants Emulex Corporation ("Emulex"), its directors, Avago Technologies Wireless (U.S.A.) Manufacturing ("AT Wireless") and Emerald Merger Sub, and purported to assert claims under Sections 14(d), 14(e) and 20(a) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). The complaint alleged, among other things, that the board of directors of Emulex failed to provide material information and/or omitted material information from the Solicitation/Recommendation Statement on Schedule 14D-9 filed with the SEC on April 7, 2015 by Emulex, together with the exhibits and annexes thereto. The complaint sought to enjoin the tender offer to purchase all of the outstanding shares of Emulex common stock, as well as certain other equitable relief and attorneys’ fees and costs. On July 28, 2015, the U.S. Central District Court issued an order appointing the lead plaintiff and approving lead counsel for the putative class. On September 9, 2015, plaintiff filed a first amended complaint seeking rescission of the merger, unspecified money damages, other equitable relief and attorneys’ fees and costs. On October 13, 2015, defendants moved to dismiss the first amended complaint, which the U.S. Central District Court granted with prejudice on January 13, 2016. Plaintiff filed a notice of appeal to the United States Court of Appeals for the Ninth Circuit (the “Ninth Circuit Court”) on January 15, 2016. The appeal is captioned Gary Varjabedian, et al. v. Emulex Corporation, et al., No. 16-55088. On June 27, 2016, the Plaintiff-Appellant filed his opening brief, on August 17 and August 22, 2016, the Defendants-Appellees filed their answering briefs, and on October 5, 2016 Plaintiff-Appellant filed his reply brief. The Ninth Circuit Court heard oral arguments on October 5, 2017. On April 20, 2018, the Ninth Circuit Court issued an opinion affirming in part and reversing in part the decision of the U.S. Central District Court and remanding Plaintiff-Appellant’s claims under Sections 14(e) and 20(a) of the Exchange Act to the U.S. Central District Court for reconsideration. On May 4, 2018, the Defendants-Appellees filed a Petition for Rehearing En Banc with the Ninth Circuit Court. On July 13, 2018, Plaintiff-Appellant filed an Opposition to the Petition for Rehearing En Banc. On September 6, 2018, the Ninth Circuit Court issued an order denying the Petition for Rehearing En Banc. On October 11, 2018, Defendants-Appellees filed a Petition for a Writ of Certiorari to the United States Supreme Court (the “U.S. Supreme Court”), which was granted on January 4, 2019. On April 23, 2019, the U.S. Supreme Court dismissed the writ of certiorari as having been improvidently granted. On May 28, 2019, the Ninth Circuit

Court remanded the case back to the U.S. Central District Court. On October 6, 2019, Plaintiff voluntarily dismissed AT Wireless from this action and the remaining defendants, Emulex and its directors, filed motions to dismiss the complaint on October 7, 2019. On February 26, 2020, the U.S. Central District Court dismissed Plaintiff's complaint with prejudice.

Other Matters

In addition to the matters discussed above, we are currently engaged in a number of legal actions in the ordinary course of our business.

Contingency Assessment

We do not believe, based on currently available facts and circumstances, that the final outcome of any pending legal proceedings or ongoing regulatory investigations, taken individually or as a whole, will have a material adverse effect on our consolidated financial statements. However, lawsuits may involve complex questions of fact and law and may require the expenditure of significant funds and other resources to defend. The results of litigation or regulatory investigations are inherently uncertain, and material adverse outcomes are possible. From time to time, we may enter into confidential discussions regarding the potential settlement of such lawsuits. Any settlement of pending litigation could require us to incur substantial costs and other ongoing expenses, such as future royalty payments in the case of an IP dispute.

During the periods presented, no material amounts have been accrued or disclosed in the accompanying consolidated financial statements with respect to loss contingencies associated with any other legal proceedings or regulatory investigations, as potential losses for such matters are not considered probable and ranges of losses are not reasonably estimable. These matters are subject to many uncertainties and the ultimate outcomes are not predictable. There can be no assurances that the actual amounts required to satisfy any liabilities arising from the matters described above will not have a material adverse effect on our consolidated financial statements.

Other Indemnifications

As is customary in our industry and as provided for in local law in the U.S. and other jurisdictions, many of our standard contracts provide remedies to our customers and others with whom we enter into contracts, such as defense, settlement, or payment of judgment for IP claims related to the use of our products. From time to time, we indemnify customers, as well as our suppliers, contractors, lessors, lessees, companies that purchase our businesses or assets and others with whom we enter into contracts, against combinations of loss, expense, or liability arising from various triggering events related to the sale and the use of our products, the use of their goods and services, the use of facilities and state of our owned facilities, the state of the assets and businesses that we sell and other matters covered by such contracts, usually up to a specified maximum amount. In addition, from time to time we also provide protection to these parties against claims related to undiscovered liabilities, additional product liabilities or environmental obligations. In our experience, claims made under such indemnifications are rare and the associated estimated fair value of the liability is not material.

15. Restructuring, Impairment and Disposal Charges

Restructuring Charges

The following is a summary of significant restructuring expense recognized primarily in operating expenses:

- During fiscal year 2020, we initiated cost reduction activities associated with the Symantec Asset Purchase. As a result, we recognized $174 million of restructuring expense primarily related to employee termination costs. We have substantially completed the restructuring activities related to the Symantec Asset Purchase.

- During fiscal year 2019, we initiated cost reduction activities associated with the CA Merger. As a result, we recognized $28 million and $740 million of restructuring expense primarily related to employee termination and lease and other exit costs during fiscal year 2020 and fiscal year 2019, respectively. We have substantially completed the restructuring activities related to the CA Merger.

The following table summarizes the significant activities within, and components of, the restructuring liabilities:

	Employee Termination Costs	Lease and Other Exit Costs	Total
		(In millions)	
Balance as of October 29, 2017	$ 28	$ 17	$ 45
Restructuring charges[a]	153	75	228
Utilization	(165)	(86)	(251)
Balance as of November 4, 2018	16	6	22
Liabilities assumed from CA	29	38	67
Restructuring charges	586	160	746
Utilization	(562)	(165)	(727)
Balance as of November 3, 2019	69	39	108
Restructuring charges[a]	186	47	233
Utilization	(221)	(50)	(271)
Effect of adoption of Topic 842[b]	—	(36)	(36)
Balance as of November 1, 2020[c]	$ 34	$ —	$ 34

(a) Included $19 million and $2 million of restructuring expense related to discontinued operations recognized during fiscal years 2020 and 2018, respectively, which was included in loss from discontinued operations.

(b) Upon adoption of Topic 842, certain restructuring lease liabilities were required to be recognized as a reduction to the corresponding ROU assets.

(c) The majority of the employee termination costs balance is expected to be paid within the first half of fiscal year 2021.

Impairment and Disposal Charges

During fiscal years 2020 and 2018, impairment and disposal charges of $19 million and $13 million, respectively, primarily related to leasehold improvements. During fiscal year 2019, impairment and disposal charges of $67 million primarily related to property, plant and equipment.

16. Subsequent Events

Preferred Stock Cash Dividends Declared

On December 8, 2020, our Board of Directors declared a quarterly cash dividend of $20.00 per share on our Mandatory Convertible Preferred Stock, payable on December 31, 2020 to stockholders of record on December 15, 2020.

Common Stock Cash Dividends Declared

On December 8, 2020, our Board of Directors declared a quarterly cash dividend of $3.60 per share on our common stock, payable on December 31, 2020 to stockholders of record on December 21, 2020.

Table of Contents

Supplementary Financial Data — Quarterly Data (Unaudited)

	Fiscal Quarter Ended							
	November 1, 2020 (1)	August 2, 2020 (2)	May 3, 2020 (3)	February 2, 2020 (4)	November 3, 2019 (5)	August 4, 2019 (6)	May 5, 2019 (7)	February 3, 2019 (8)
	(In millions, except per share data)							
Total net revenue	$ 6,467	$ 5,821	$ 5,742	$5,858	$ 5,776	$ 5,515	$ 5,517	$5,789
Gross margin	3,747	3,316	3,189	3,264	3,152	3,034	3,089	3,208
Operating income	1,526	1,008	766	714	1,054	865	970	555
Income from continuing operations	1,324	689	568	380	847	715	693	481
Income (loss) from discontinued operations, net of income taxes	—	(1)	(5)	5	—	—	(2)	(10)
Net income	1,324	688	563	385	847	715	691	471
Dividends on preferred stock[9]	(74)	(74)	(75)	(74)	(29)	—	—	—
Net income attributable to common stock	$ 1,250	$ 614	$ 488	$ 311	$ 818	$ 715	$ 691	$ 471
Diluted income per share attributable to common stock[10]:								
Income per share from continuing operations	$ 2.93	$ 1.46	$ 1.18	$ 0.73	$ 1.97	$ 1.71	$ 1.64	$ 1.15
Income (loss) per share from discontinued operations	—	(0.01)	(0.01)	0.01	—	—	—	(0.03)
Net income per share	$ 2.93	$ 1.45	$ 1.17	$ 0.74	$ 1.97	$ 1.71	$ 1.64	$ 1.12
Dividends declared and paid per share to common stockholders	$ 3.25	$ 3.25	$ 3.25	$ 3.25	$ 2.65	$ 2.65	$ 2.65	$ 2.65
Dividends declared and paid per share to common stockholders -full year	$ 13.00				$ 10.60			

---

(1) Included amortization of acquisition-related intangible assets of $1,561 million.
(2) Included amortization of acquisition-related intangible assets of $1,553 million.
(3) Included amortization of acquisition-related intangible assets of $1,553 million.

(4) Included the results of Symantec Business beginning with the fiscal quarter ended February 2, 2020 in connection with the Symantec Asset Purchase on November 4, 2019. Also included amortization of acquisition-related intangible assets of $1,553 million.
(5) Included amortization of acquisition-related intangible assets of $1,301 million.
(6) Included amortization of acquisition-related intangible assets of $1,303 million.
(7) Included amortization of acquisition-related intangible assets of $1,299 million.
(8) Included amortization of acquisition-related intangible assets of $1,309 million and restructuring, impairment and disposal charges of $629 million.
(9) Beginning with the fiscal quarter ended November 3, 2019, net income attributable to common stock excluded dividends on Mandatory Convertible Preferred Stock issued during the fiscal quarter ended November 3, 2019.
(10) The sum of quarterly per share information may not equal annual earnings per share as quarterly earnings per share were computed independently for each period presented.

Schedule II — Valuation and Qualifying Accounts

	Balance at Beginning of Period	Additions to Allowances	Charges Utilized/ Write-offs	Balance at End of Period
	(In millions)			
Accounts receivable allowances:				
Distributor credit allowances [1]				
Fiscal year ended November 1, 2020	$ 153	$ 696	$ (700)	$ 149
Fiscal year ended November 3, 2019	$ 151	$ 705	$ (703)	$ 153
Fiscal year ended November 4, 2018	$ 177	$ 882	$ (908)	$ 151
Other accounts receivable allowances [2]				
Fiscal year ended November 1, 2020	$ 38	$ 84	$ (94)	$ 28
Fiscal year ended November 3, 2019	$ 12	$ 99	$ (73)	$ 38
Fiscal year ended November 4, 2018	$ 31	$ 116	$ (135)	$ 12
Income tax valuation allowances:				
Fiscal year ended November 1, 2020	$ 1,563	$ 149	$ (5)	$ 1,707
Fiscal year ended November 3, 2019	$ 1,347	$ 284	$ (68)	$ 1,563
Fiscal year ended November 4, 2018	$ 1,447	$ 314	$ (414)	$ 1,347

(1) Distributor credit allowances relate to price adjustments and other allowances.

(2) Other accounts receivable allowances primarily include sales returns and allowance for doubtful accounts.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), evaluated the effectiveness of our disclosure controls and procedures as of November 1, 2020. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of November 1, 2020, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by the Board, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of us are being made only in accordance with authorizations of management and directors; and
- 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 financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

Our management assessed the effectiveness of our internal control over financial reporting as of November 1, 2020. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control-Integrated Framework* (2013)*.* Based on this assessment, our management concluded that, as of November 1, 2020, our internal control over financial reporting is effective based on those criteria.

The effectiveness of our internal control over financial reporting, as of November 1, 2020 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included in Part II, Item 8. of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fourth quarter ended November 1, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. Although we have modified our workplace practices globally due to the COVID-19 pandemic, resulting in most of our employees working remotely, this has not meaningfully affected our internal controls over financial reporting. We are continually monitoring and assessing the COVID-19 situation on our internal controls to minimize the impact on their design and operating effectiveness.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information regarding our directors and executive officers, set forth in the sections entitled "Proposal 1 — Election of Directors," "Executive Officers" and "Corporate Governance," in our definitive Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2020 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

We have adopted a written Code of Ethics and Business Conduct that applies to all of our employees and directors, including our principal executive officer, principal financial officer and principal accounting officer, or persons performing similar functions and have posted it in the "Investors Center — Governance" section of our website, which is located at www.broadcom.com. We intend to satisfy any disclosure requirement under Item 5.05 of Form 8-K regarding any amendments to, or waivers from, our Code of Ethics and Business Conduct by posting such information on our website at the internet address and location above.

ITEM 11. EXECUTIVE COMPENSATION

The information regarding executive compensation required by this Item 11 set forth in the sections entitled "Director Compensation", "Compensation Discussion and Analysis," "Executive Compensation," "Compensation Committee Report" and "Corporate Governance — Compensation Committee Interlocks and Insider Participation" in our definitive Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2020 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section. However, the Compensation Committee Report included in such definitive Proxy Statement shall not be deemed "filed" with the SEC for the purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing made by us with the SEC, regardless of any general incorporation language in such filing.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information regarding security ownership of certain beneficial owners and management and related stockholder matters required by this Item 12 set forth in the section entitled "Stockholder Information — Security Ownership of Certain Beneficial Owners, Directors and Executive Officers" and "Equity Compensation Plan Information" in our definitive Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2020 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information regarding certain relationships, related transactions and director independence required by this Item 13 set forth in the sections entitled "Corporate Governance" and "Certain Relationships and Related Party Transactions" in our definitive Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2020 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information regarding principal accounting fees and services required by this Item 14 set forth in the proposal relating to the re-appointment of our independent registered public accounting firm in our definitive Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2020 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

Table of Contents

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The following consolidated financial statements are included in Item 8 of this Annual Report on Form 10-K:

2. Financial Statement Schedules

The financial statement schedule of the Registrant and its subsidiaries for fiscal years 2020, 2019 and 2018 required by Item 15(a) (Schedule II, Valuation and Qualifying Accounts) is included in Item 8 of this Annual Report on Form 10-K:

Schedules not filed have been omitted because they are not applicable, are not required or the information required to be set forth therein is included in the financial statements or notes thereto.

3. Exhibits

The documents set forth below are filed herewith or incorporated by reference to the location indicated.

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
2.1#	Agreement and Plan of Merger, dated as of July 11, 2018, by and among Broadcom, Inc., Collie Acquisition Corp. and CA, Inc.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	July 12, 2018	
2.2#	Asset Purchase Agreement, dated as of August 8, 2019, by and between Broadcom Inc. and Symantec Corporation.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	August 9, 2019	
2.3#	APA Letter Agreement, dated as of October 1, 2020, by and between Broadcom Inc. and NortonLifeLock Inc.			X
3.1	Amended and Restated Certificate of Incorporation.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
3.2	Certificate of Designation of the 8.00% Mandatory Convertible Preferred Stock, Series A.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2019	
3.3	Amended and Restated Bylaws.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
4.1	Form of Common Stock Certificate.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 14, 2018	
4.2	Form of Certificate of the 8.00% Mandatory Convertible Preferred Stock, Series A (included in Exhibit 3.2).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2019	
4.3	Description of Common Stock.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 20, 2019	
4.4	Description of 8.00% Mandatory Convertible Preferred Stock, Series A.	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 20, 2019	
4.5	Indenture, dated as of January 19, 2017, by and among the Broadcom Corporation and Broadcom Cayman Finance Limited ("Co-Issuers"), the guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.6	Supplement Indenture to the January 2017 Indenture, dated as of April 9, 2018.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 9, 2018	
4.7	Second Supplement Indenture to the January 2017 Indenture, dated as of January 25, 2019.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 25, 2019	
4.8	Form of 2.375% Senior Note due 2020 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.9	Form of 3.000% Senior Note due 2022 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.10	Form of 3.625% Senior Note due 2024 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.11	Form of 3.875% Senior Note due 2027 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.12	Indenture, dated as of October 17, 2017, by and among the Co-Issuers, the guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.13	Supplement Indenture to October 2017 Indenture, dated as of April 9, 2018.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2018	
4.14	Second Supplement Indenture to October 2017 Indenture, dated as of January 25, 2019.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 25, 2019	
4.15	Form of 2.200% Senior Note due 2021 (included in Exhibit 4.12).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	

Exhibit No.	Description	Incorporated by Referenced Herein Form	 Filing Date	Filed Herewith
4.18	Form of 3.500% Senior Note due 2028 (included in Exhibit 4.12).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.19	Indenture, dated as of April 5, 2019, by and among the Company, as Issuer, Broadcom Technologies Inc., Broadcom Corporation and Broadcom Cayman Finance Limited (the "2019 Guarantors"), and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.20	Form of 3.125% Senior Note due 2021 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.21	Form of 3.125% Senior Note due 2022 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.22	Form of 3.625% Senior Note due 2024 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.23	Form of 4.250% Senior Note due 2026 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.24	Form of 4.750% Senior Note due 2029 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.25	Registration Rights Agreement, dated as of April 5, 2019, by and among the Company, the 2019 Guarantors and Merrill Lynch, Pierce, Fenner & Smith Incorporated and J.P. Morgan Securities LLC, as representatives of the several initial purchasers of the April 2019 Notes.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 5, 2019	
4.26	Indenture, dated as of April 9, 2020, by and among the Company, as Issuer, Broadcom Technologies Inc. and Broadcom Corporation (the "2020 Guarantors"), and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.27	Form of 4.700% Senior Notes due 2025 (included in Exhibit 4.26).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.28	Form of 5.000% Senior Notes due 2030 (included in Exhibit 4.26).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.29	Registration Rights Agreement, dated as of April 9, 2020, by and among the Company, the 2020 Guarantors and J.P. Morgan Securities LLC, as representative of the several initial purchasers of the April 2020 Senior Notes.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2020	
4.30	Indenture, dated as of May 8, 2020, by and among the Company, as	Broadcom Inc. Current Report on Form 8-K	May 8, 2020	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
4.33	Form of 4.150% Senior Notes due 2030 (included in Exhibit 4.30).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.34	Form of 4.300% Senior Notes due 2032 (included in Exhibit 4.30).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.35	Registration Rights Agreement, dated as of May 8, 2020, by and among the Company, the 2020 Guarantors and Citigroup Global Markets Inc., HSBC Securities (USA) Inc., J.P. Morgan Securities LLC and Wells Fargo Securities, LLC, as representatives of the several initial purchasers of the May 2020 Senior Notes.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 8, 2020	
4.36	Indenture, dated as of May 21, 2020, by and among the Company, the 2020 Guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.37	Form of 3.459% Senior Notes due 2026 (included in Exhibit 4.36).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.38	Form of 4.110% Senior Notes due 2028 (included in Exhibit 4.36).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
4.39	Registration Rights Agreement, dated as of May 21, 2020, by and among the Company, the 2020 Guarantors and Barclays Capital Inc. and Credit Suisse Securities (USA) LLC, as dealer-managers in connection with the Exchange Offers.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	May 21, 2020	
10.1	Form of Indemnification and Advancement Agreement (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.2	Form of Indemnification Agreement (Directors) (effective June 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	June 9, 2016	
10.3	Form of Indemnification Agreement (Officers) (effective June 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	June 9, 2016	
10.4	Form of Indemnification Agreement (Directors) (effective February 1, 2016).	Broadcom Limited Current Report on Form 8-K12B (Commission File No. 001-37690)	February 2, 2016	
10.5	Form of Indemnification Agreement (Directors) (effective prior to February 1, 2016).	Avago Technologies Limited Quarterly Report on Form 10-Q (Commission File No. 001-34428)	September 13, 2013	
10.6	Form of Indemnification Agreement (Officers) (effective prior to February 1, 2016).	Avago Technologies Finance Pte. Ltd. Amendment No. 1 to Annual Report on Form	February 27, 2008	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein — Form	Filing Date	Filed Herewith
10.9	Sublease Agreement, dated June 5, 2009, between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Limited Registration Annual Report on Form 10-K (Commission File No. 001-33428)	December 15, 2010	
10.10	Amendments of Sublease Agreement between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at 1 Yishun Avenue 7 Singapore 768923.	Avago Technologies Limited Registration Annual Report on Form 10-K (Commission File No. 001-33428)	December 17, 2015	
10.11	Amendment No. 3 of Sublease Agreement between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at 1 Yishun Avenue 7 Singapore 768923.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.12	Letter of Offer for Sublease Premises located at 1 Yishun Avenue 7, Singapore 768923.			X
10.13	Lease No. I/33183P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1935X of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49501Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006	
10.14	Lease No. I/31607P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1937C of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49499Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006	
10.15	Lease No. I/33182P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 2134N of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49500Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006	
10.16	Lease No. I/33160P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1975P of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49502Q registered	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.20+	Avago Technologies Limited 2009 Equity Incentive Award Plan.	Avago Technologies Limited Registration Statement on Form S-1 (Commission File No. 333-153127)	July 27, 2009	
10.21+	Second Amended and Restated Employee Stock Purchase Plan.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	February 2, 2016	
10.22+	Amendment to Broadcom Limited Second Amended and Restated Employee Stock Purchase Plan.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.23+	LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-195741)	May 6, 2014	
10.24+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.25+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.26+	Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	January 29, 2015	
10.27+	Amendment to the Broadcom Corporation 2012 Stock Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.28+	Amendment to the Broadcom Corporation 2012 Stock Incentive Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.29+	Brocade Communications Systems, Inc. Amended and Restated Inducement Award Plan, effective as of May 24, 2016.	Brocade Communication Systems, Inc. Post-Effective Amendment No. 1 to Form S-4 on Form S-8 Registration Statement (Commission File No. 333-211823)	June 3, 2016	
10.30+	Amendment to the Brocade Communication Systems, Inc. Amended and Restated Inducement Award Plan (effective November 17, 2017).	Broadcom Limited Registration Statement on Form S-8 (Commission File No. 333-221654)	November 11, 2017	
10.31+	Amendment to the Brocade Communication Systems, Inc. Amended and Restated Inducement Award Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.32+	CA, Inc. 2011 Incentive Plan, as amended and restated as of November 5, 2018.	Broadcom Inc. Registration Statement on Form S-8 (Commission File No. 333-228175	November 5, 2018	
10.33+	Bay Dynamics, Inc. 2016 Equity Incentive Plan.	Broadcom Inc. Registration Statement on Form S-8 (Commission File No. 333-235753)	December 30, 2019	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	 Filing Date	Filed Herewith
10.36+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.37+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.38+	Form of Restricted Stock Unit Award Agreement under Avago Technologies Limited 2009 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.39+	Form of Restricted Stock Unit Award Agreement under Avago Technologies Limited 2009 Equity Incentive Plan (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018	
10.40+	Form of Agreement for Multi-Year Equity Award of Restricted Stock Unit Award under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 6, 2018	
10.41+	Form of Performance Stock Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Award Plan.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 9, 2017	
10.42+	Form of Performance Share Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective March 13, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018	
10.43+	Form of Performance Share Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.44+	Form of Performance Stock Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018	
10.45+	Form of Agreement for Multi-Year Equity Award of Performance Stock Units under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 6, 2018	
10.46+	Form of Option Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-196438)	June 2, 2014	
10.47+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.48+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.52+	Form of Performance Stock Unit Agreement (Relative TSR) under LSI Corporation 2003 Equity Incentive Plan, as amended (effective December 8, 2020).			X
10.53+	Broadcom Corporation Amended and Restated Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	April 24, 2014	
10.54+	Amendment to Broadcom Corporation Amended and Restated Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	July 30, 2015	
10.55+	Form of Award Letter under the Broadcom Corporation Amended and Restated Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	April 24, 2014	
10.56+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.57+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.58+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.59+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018	
10.60+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective December 6, 2019).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 20, 2019	
10.61+	Form of Agreement for Multi-Year Equity Award of Restricted Stock Units under the Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 6, 2018	
10.62+	Form of Performance Stock Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 9, 2017	
10.63+	Form of Performance Share Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective March 15, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018	
10.64+	Form of Performance Share Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.65+	Form of Performance Stock Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018	

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
10.68+	Performance Stock Unit Award Agreement, dated June 15, 2017, between Broadcom Limited and Hock E. Tan.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	June 19, 2017	
10.69+	Policy on Acceleration of Executive Staff Equity Awards in the Event of Permanent Disability.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	March 15, 2019	
10.70+	Policy on Acceleration of Equity Awards in the Event of Death.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	March 15, 2019	
10.71+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Hock E. Tan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.72+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Thomas H. Krause, Jr.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.73+	Amended and Restated Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Charlie B. Kawwas.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.74+	Severance Benefits Agreement, dated September 26, 2017, between Broadcom Limited and Mark Brazeal.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.75+	Severance Benefits Agreement, dated December 10, 2020, between Broadcom Inc. and Kirsten M. Spears.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
10.76+	Letter Agreement dated December 8, 2020, between Broadcom Inc. and Kirsten M. Spears.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	December 10, 2020	
21.1	List of Subsidiaries.			X
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.			X
24.1	Power of Attorney (see signature page to this Form 10-K).			X
31.1	Certification of Principal Executive Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			X
31.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			X
32.1	Certification of Principal Executive Officer of Broadcom Inc. Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			X
32.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to			X

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
101.DEF	XBRL Definition Linkbase Document			X
101.LAB	XBRL Labels Linkbase Document			X
101.PRE	XBRL Presentation Linkbase Document			X
104	Cover Page Interactive Data File - the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.			X

Notes:

+ Indicates a management contract or compensatory plan or arrangement.

Schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Broadcom Inc. hereby undertakes to furnish supplementally copies of any omitted schedules upon request by the SEC.

* Certain information omitted pursuant to a request for confidential treatment filed with the SEC.

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.

BROADCOM INC.

By: **/s/ Hock E. Tan**

Name: Hock E. Tan

Title: President and Chief Executive Officer

Date: December 18, 2020

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Hock E. Tan, Kirsten M. Spears and Mark D. Brazeal, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the Registrant in the capacities indicated and on the dates indicated.

Signature	Title	Date
/s/ Hock E. Tan **Hock E. Tan**	President and Chief Executive Officer and Director (Principal Executive Officer)	December 18, 2020
/s/ Kirsten M. Spears **Kirsten M. Spears**	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	December 18, 2020
/s/ Henry Samueli **Henry Samueli**	Chairman of the Board of Directors	December 18, 2020
/s/ Eddy W. Hartenstein **Eddy W. Hartenstein**	Lead Independent Director	December 18, 2020
/s/ Diane M. Bryant **Diane M. Bryant**	Director	December 18, 2020
/s/ Gayla J. Delly **Gayla J. Delly**	Director	December 18, 2020
/s/ Raul F. Fernandez **Raul F. Fernandez**	Director	December 18, 2020
/s/ Check Kian Low **Check Kian Low**	Director	December 18, 2020
/s/ Justine F. Page **Justine F. Page**	Director	December 18, 2020
/s/ Harry L. You **Harry L. You**	Director	December 18, 2020

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, DC 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 November 3, 2019
OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to

Broadcom Inc.

Delaware	**1320 Ridder Park Drive San Jose, CA 95131-2313**	**001-38449**	**35-2617337**
(State or Other Jurisdiction of Incorporation or Organization)	**(408) 433-8000**	**(Commission File Number)**	**(I.R.S. Employer Identification No.)**
	(Exact Name of Registrant as Specified in Its Charter Address of Principal Executive Offices 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, $0.001 par value	AVGO	The NASDAQ Global Select Market
8.00% Mandatory Convertible Preferred Stock, Series A, $0.001 par value	AVGOP	The NASDAQ Global Select 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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	☐	Smaller reporting company	☐	Emerging growth company	☐

(Do not check if a smaller reporting 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 voting and non-voting common equity held by non-affiliates as of May 3, 2019, based upon the closing sale price of such shares on The Nasdaq Global Select Market on such date was approximately $122.7 billion.

As of November 29, 2019, the registrant had 397,792,289 shares of its common stock, $0.001 par value per share, outstanding.

Documents Incorporated by Reference

Information required in response to Part III of this Annual Report on Form 10-K is hereby incorporated by reference from the registrant's definitive Proxy Statement for its 2020 Annual Meeting of Stockholders. Except as expressly incorporated by reference, the registrant's Proxy Statement shall not be deemed to be a part of this Annual Report on Form 10-K. The registrant intends to file its definitive Proxy Statement within 120 days after its fiscal year ended November 3, 2019.

BROADCOM INC.
2019 ANNUAL REPORT ON FORM 10-K

TABLE OF CONTENTS

PART I

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws and particularly in Item 1: "Business," Item 1A: "Risk Factors," Item 3: "Legal Proceedings" and Item 7: "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Annual Report on Form 10-K. These statements are indicated by words or phrases such as "anticipate," "expect," "estimate," "seek," "plan," "believe," "could," "intend," "will," and similar words or phrases. These forward-looking statements may include projections of financial information; statements about historical results that may suggest trends for our business; statements of the plans, strategies, and objectives of management for future operations; statements of expectation or belief regarding future events (including any acquisitions we may make), technology developments, our products, product sales, expenses, liquidity, cash flow and growth rates, or enforceability of our intellectual property rights; and the effects of seasonality on our business. Such statements are based on current expectations, estimates, forecasts and projections of our industry performance and macroeconomic conditions, based on management's judgment, beliefs, current trends and market conditions, and involve risks and uncertainties that may cause actual results to differ materially from those contained in the forward-looking statements. We derive most of our forward-looking statements from our operating budgets and forecasts, which are based upon many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results. Accordingly, we caution you not to place undue reliance on these statements. Important factors that could cause actual results to differ materially from our expectations are disclosed under "Risk Factors" in Part I, Item 1A of this Annual Report on Form 10-K. These factors include risks associated with: our acquisition of Symantec Corporation's Enterprise Security business ("Symantec Business"), including (1) potential difficulties in employee retention, (2) unexpected costs, charges or expenses, and (3) our ability to successfully integrate the Symantec Business and achieve the anticipated benefits of the transaction; any loss of our significant customers and fluctuations in the timing and volume of significant customer demand; our dependence on contract manufacturing and outsourced supply chain; our dependency on a limited number of suppliers; global economic conditions and concerns; international political and economic conditions; any acquisitions we may make, such as delays, challenges and expenses associated with receiving governmental and regulatory approvals and satisfying other closing conditions, and with integrating acquired companies with our existing businesses and our ability to achieve the growth prospects and synergies expected by such acquisitions, including our recent acquisition of the Symantec Business; government regulations and trade restrictions; our significant indebtedness, including the additional indebtedness that we incurred in connection with the Symantec Business acquisition and the need to generate sufficient cash flows to service and repay such debt; dependence on and risks associated with distributors and resellers of our products; dependence on senior management and our ability to attract and retain qualified personnel; involvement in legal and administrative proceedings; quarterly and annual fluctuations in our operating results; our ability to accurately estimate customers' demand and adjust our manufacturing and supply chain accordingly; cyclicality in the semiconductor industry or in our target markets; our competitive performance and ability to continue achieving design wins with our customers, as well as the timing of any design wins; prolonged disruptions of our or our contract manufacturers' manufacturing facilities or other significant operations; our ability to improve our manufacturing efficiency and quality; our dependence on outsourced service providers for certain key business services and their ability to execute to our requirements; our ability to maintain or improve gross margin; our ability to protect our intellectual property and the unpredictability of any associated litigation expense; compatibility of our software products with operating environments, platforms or third-party products; our ability to enter into satisfactory software license agreements; sales to our government clients; availability of third party software used in our products; use of open source code sources in our products; any expense or reputational damage associated with resolving customer product warranty and indemnification claims; market acceptance of the end products into which our products are designed; our ability to sell to new types of customers and to keep pace with technological advances; our compliance with privacy and data security laws; our ability to protect against a breach of security systems; changes in accounting standards; fluctuations in foreign exchange rates; our provision for income taxes and overall cash tax costs, legislation that may impact our overall cash tax costs and our ability to maintain tax concessions in certain jurisdictions; and other events and trends on a national, regional and global scale, including those of a political, economic, business, competitive and regulatory nature. All of the forward-looking statements in this Annual Report on Form 10-K are qualified in their entirety by reference to the factors listed above and those discussed under the heading “Risk Factors” in Part I, Item 1A of this Annual Report on Form 10-K. We caution you that the foregoing list of important factors may not contain all of the material factors that are important to you. In addition, in light of these risks and uncertainties, the matters referred to in the forward-looking statements contained in this Annual Report on Form 10-K may not in fact occur. We undertake no intent or obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as otherwise required by law.

Financial information and results of operations presented relate to (1) Broadcom Inc. for the periods after April 4, 2018, (2) Broadcom Limited, our predecessor, for the period from February 1, 2016 to April 4, 2018, and (3) Avago Technologies Limited, predecessor to Broadcom Limited, for periods prior to February 1, 2016. Similarly, unless stated otherwise or the context otherwise requires, references to “Broadcom,” “we,” “our” and “us” mean Broadcom Inc. and its consolidated subsidiaries after April 4, 2018 and, prior to that time, our predecessors. Our fiscal year ends on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. We refer to our fiscal years by the calendar year in which they end. For example, the fiscal year ended November 3, 2019 is referred to as “fiscal year 2019”, and was a 52-week year.

ITEM 1. BUSINESS

Overview

Broadcom Inc. ("Broadcom") is the successor to Broadcom Pte. Ltd. (formerly Broadcom Limited), a Singapore company ("Broadcom-Singapore"), as a result of our redomiciliation to the United States on April 4, 2018 (the "Redomiciliation Transaction"). We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Our over 50-year history of innovation dates back to our diverse origins from Hewlett-Packard Company, AT&T, LSI Corporation, Broadcom Corporation ("BRCM"), Brocade Communications Systems LLC ("Brocade"), CA, Inc. ("CA") and Symantec Corporation. Over the years, we have assembled a large team of semiconductor and software design engineers around the world. We maintain design, product and software development engineering resources at locations in the U.S., Asia, Europe and Israel, providing us with engineering expertise worldwide. We strategically focus our research and development resources to address niche opportunities in our target markets and leverage our extensive portfolio of U.S. and other patents, and other intellectual property ("IP") to integrate multiple technologies and create system-on-chip ("SoC") component and software solutions that target growth opportunities. We design products and software that deliver high-performance and provide mission-critical functionality.

We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor ("CMOS") based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. We differentiate ourselves through our high performance design and integration capabilities and focus on developing products for target markets where we believe we can earn attractive margins.

Our infrastructure software solutions enable customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms. Many of the largest companies in the world, including most of the Fortune 500 and many government agencies, rely on our enterprise and mainframe software to help manage and secure their on-premise and hybrid cloud environments. Our portfolio of mainframe and enterprise software solutions enables customers to leverage the benefits of agility, automation, insights and security in managing business processes and technology investments. We also offer mission critical fibre channel storage area networking ("FC SAN") products and related software in the form of modules, switches and subsystems incorporating multiple semiconductor products. Following the acquisition of Symantec's Enterprise Security business, we also offer a cybersecurity solutions portfolio, including data loss prevention, endpoint protection, and web, email and cloud security solutions.

Recent Developments

Acquisition of Symantec's Enterprise Security Business

On November 4, 2019, we completed the purchase of certain assets and assumed certain liabilities of the Symantec Corporation (now known as NortonLifeLock Inc.) Enterprise Security business (the "Symantec Business") for approximately $10.7 billion in cash, on a cash-free, debt-free basis (the "Symantec Asset Purchase"), subject to delayed closings in certain non-U.S. jurisdictions, in accordance with the terms of the Asset Purchase Agreement (as amended or supplemented) we entered into with Symantec on August 8, 2019. The addition of the Symantec Business significantly expands our infrastructure software solutions as we continue to build one of the world’s leading infrastructure technology companies.

The Symantec Business is an established leader in cybersecurity. We acquired the Symantec Business to expand our footprint of mission critical infrastructure software with our existing customer base. The Symantec Business includes a deep and broad mix of products, services and solutions, unifying cloud and on-premises security to provide advanced threat protection and information protection across endpoints, network, email and cloud applications. The key components of the Symantec Business include:

Data Loss Prevention: Data access governance, activity monitoring, threat detection, and remediation solutions that enable security access to cloud applications.

Endpoint Protection: A single agent architecture that delivers multi-layered security across endpoints - desktop, server, mobile and Internet of Things (“IoT”) - and enables customers to protect enterprise and mobile workforces, regardless of operating system, device or network security approaches.

Network Security: Cloud and on-premises network security solutions, based on an advanced proxy architecture, that provide superior defense against advanced threats, enable users to protect critical business information, and help ensure secure and compliant use of cloud applications and the web.

Email Security: Multiple layers of protection (including threat isolation and advanced analytics) against ransomware, spear phishing, and enterprise email compromise that help to identify targeted attacks and enable users to protect email against user error and data leakage.

Cloud Application Security: Advanced solutions that secure cloud access, cloud infrastructure, and cloud applications, providing in-depth visibility, data security, and threat protection to safeguard users, information and workloads across public and private clouds.

Acquisition of CA, Inc.

On November 5, 2018, we acquired CA for approximately $18.8 billion in cash and assumed $2.25 billion of outstanding unsecured bonds (the "CA Merger"). We financed the CA Merger with $18 billion in new term loans, as well as cash on hand of the combined companies. We also assumed all eligible unvested CA equity awards in the transaction.

Following the CA Merger, we sold Veracode, Inc., a subsidiary of CA and provider of application security testing solutions, to Thoma Bravo, LLC for an aggregate purchase price of $950 million.

Segment Reporting

We updated our organizational structure for the fiscal year ended November 3, 2019 ("fiscal year 2019"), resulting in three reportable segments: semiconductor solutions, infrastructure software and IP licensing. Beginning with the fiscal year ending November 1, 2020, we will have two reportable segments: semiconductor solutions and infrastructure software. Each segment represents a component for which separate financial information is available that is utilized on a regular basis by the chief operating decision maker in determining how to allocate resources and evaluate performance. The reportable segments are determined based on several factors including, but not limited to, customer base, homogeneity of products, technology, delivery channels and similar economic characteristics.

Our semiconductor solutions segment will continue to include all of our semiconductor solution product lines, as well as our IP licensing. Our infrastructure software segment will include our mainframe and enterprise software solutions, our FC SAN business and the Symantec Business.

See discussion in the "Results of Operations" section included in Part II, Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations* and Note 12. "Segment Information" included in Part II, Item 8. *Financial Statements and Supplementary Data,* of this Annual Report on Form 10-K for additional segment information. For fiscal year 2019, net revenue included contributions from CA commencing on November 5, 2018, which are included in the infrastructure software segment. For the fiscal year ended November 4, 2018 ("fiscal year 2018"), net revenue included contributions from Brocade commencing on November 17, 2017, which are primarily included in the infrastructure software segment. *All discussions and information in this Annual Report on Form 10-K regarding our business and financial results relate solely to our operations prior to the Symantec Asset Purchase, unless otherwise indicated.*

Business Strategy

Our strategy is to combine best-of-breed technology leadership in semiconductor and infrastructure software solutions, with unmatched scale, on a common sales and administrative platform to deliver a comprehensive suite of infrastructure technology products to the world's leading business and government customers. We seek to achieve this through responsibly financed acquisitions of category-leading businesses and technologies, as well as investing extensively in research and development, to ensure our products retain their technology leadership. This strategy results in a robust business model designed to drive diversified and sustainable operating and financial results.

Products and Markets

Semiconductor Solutions

Semiconductors are made by imprinting a network of electronic components onto a semiconductor wafer. These devices are designed to perform various functions such as processing, amplifying and selectively filtering electronic signals, controlling electronic system functions and processing, and transmitting and storing data. Our digital and mixed signal products are based on silicon wafers with CMOS transistors offering fast switching speeds and low power consumption, which are both critical design factors for the markets we serve. We also offer analog products, which are based on III-V semiconductor materials that have higher electrical conductivity than silicon, and thus tend to have better performance characteristics in radio frequency ("RF"), and optoelectronic applications. III-V refers to elements from the 3rd and 5th groups in the periodic table of chemical elements. Examples of these materials used in our products are gallium arsenide ("GaAs") and indium phosphide, ("InP").

Table of Contents

We provide semiconductor solutions for managing the movement of data in data center, telecom, enterprise, and embedded networking applications. We provide a broad variety of RF semiconductor devices, wireless connectivity solutions and custom touch controllers for mobile applications. We also provide semiconductor solutions for enabling the set-top box and broadband access markets and for enabling secure movement of digital data to and from host machines, such as servers, personal computers and storage systems, to the underlying storage devices, such as hard disk drives and solid state drives. We also provide a broad variety of products for the general industrial and automotive markets.

Our product portfolio ranges from discrete devices to complex sub-systems that include multiple device types and may also incorporate firmware for interfacing between analog and digital systems. In some cases, our products include mechanical hardware that interfaces with optoelectronic or capacitive sensors. We focus on markets that require high quality and the technology leadership and integrated performance characteristic of our products. The table below presents our major semiconductor product families and their major applications during fiscal year 2019.

Major Applications	Major Product Families
• Set-top Box ("STB") and Broadband Access	• STB SoCs
	• Cable, digital subscriber line ("DSL") and passive optical networking ("PON") central office/consumer premise equipment ("CO/CPE") SoCs
	• Wireless local area network ("WLAN") access point SoCs
• Data center, Telecom, Enterprise and Embedded Networking	• Ethernet switching and routing application specific standard product ("ASSP")
	• Embedded processors and controllers
	• Serializer/Deserializer ("SerDes"), application specific integrated circuits ("ASICs")
	• Optical and copper, physical layer ("PHYs")
	• Fiber optic transmitter and receiver components
• Mobile handsets	• RF front end modules (FEMs), filters, power amplifiers
	• Wi-Fi, Bluetooth, global positioning system/global navigation satellite system ("GPS/GNSS") SoCs
	• Custom touch controllers
• Servers and storage systems	• Serial attached small computer system interface ("SAS") and redundant array of independent disks ("RAID") controllers and adapters
	• Peripheral component interconnect express ("PCIe") switches
	• Fibre channel host bus adapters ("HBA")
• Hard disk drives ("HDD"); Solid state drives ("SSD")	• Read channel based SoCs; Custom flash controllers
	• Preamplifiers
• Power isolation, power conversion and renewable energy systems	• Optocouplers
• Factory automation, in-car infotainment and renewable energy systems	• Industrial fiber optics
• Motor controls and factory automation	• Motion control encoders and subsystems
• Displays and lighting	• Light emitting diode ("LEDs")

Set-Top Box Solutions: We offer complete SoC platform solutions for cable, satellite, Internet Protocol television, over-the-top and terrestrial STBs. Our products enable global service providers to introduce new and enhanced technologies and services in STBs, including transcoding, digital video recording functionality, higher definition video processing, increased networking capabilities, and more tuners to enable faster channel change and more simultaneous recordings. We are also enabling service providers in deploying High Efficiency Video Coding ("HEVC"), a video compression format that is a successor to the H.

264/MPEG-4 format. HEVC enables ultra-high definition ("Ultra HD"), services by effectively doubling the capacity of existing networks to deploy new or existing content. Our families of STB solutions support the complete range of resolutions, from standard definition, to high definition, and Ultra HD.

Broadband Access Solutions: We offer complete SoC platform solutions for DSL, cable, PON and WLAN for both CPE and CO deployments. Our CPE devices are used in broadband modems, residential gateways and Wi-Fi access points and routers. Our CO devices, including DSL Access Multiplexer, cable modem termination systems and PON optical line termination medium access controller, are empowering modern operator broadband infrastructure. Our products enable global service providers to continue to deploy next generation broadband access technologies across multiple standards, including G.Fast, data over cable service interface specification, PON and Wi-Fi to provide more bandwidth and faster speeds to consumers.

Ethernet Switching & Routing: Ethernet is a ubiquitous interconnection technology that enables high performance and cost effective networking infrastructure. We offer a broad set of Ethernet switching and routing products that are optimized for data center, service provider network, enterprise network, and embedded network applications. In the data center market, our high capacity, low latency, switching silicon supports advanced protocols around virtualization and multi-pathing. Our Ethernet switching fabric technologies provide the ability to build highly scalable flat networks supporting tens of thousands of servers. Our service provider switch portfolio enables carrier/service provider networks to support a large number of services in the wireless backhaul, access, aggregation and core of their networks. For enterprise networks and embedded ethernet applications, we offer product families that combine multi-layer switching capabilities and support lower power modes that comply with industry standards around energy efficient Ethernet.

Embedded Processors & Controllers: Our embedded processors leverage our ARM central processing unit and Ethernet switching technology to deliver SoCs for high performance embedded applications in a wide range of communication products such as voice-over-internet-protocol, telephony, point-of-sale devices and enterprise and retail access points and gateways. We offer a range of knowledge-based processors to enable high-performance decision-making for packet processing in a variety of advanced devices in the enterprise, metro, access, edge and core networking spaces. We also offer a range of Ethernet controllers for servers and storage systems supporting multiple generations of Ethernet technology.

SerDes ASICs: For data center and enterprise networking, and high performance computing applications, we supply high speed SerDes technology integrated into ASICs. These ASICs are custom products built to individual customers specifications. Our ASICs are designed on advanced CMOS process technologies, focused primarily on leading edge geometries.

Physical Layer Devices: These devices, also referred to as PHYs, are transceivers that enable the reception and transmission of Ethernet data packets over a physical medium such as copper wire or optical fibers. Our high performance Ethernet transceivers are built upon a proprietary digital signal processing communication architecture optimized for high-speed network connections and support the latest standards and advanced features, such as energy efficient Ethernet, data encryption and time synchronization. We also offer a range of automotive Ethernet products to meet growing consumer demand for in-vehicle connectivity.

Fiber Optic Components: We supply a wide array of optical components to the Ethernet networking, storage, and access, metro- and long-haul telecommunication markets. Our optical components enable the high speed reception and transmission of data through optical fibers.

RF Semiconductor Devices: Our RF semiconductor devices selectively filter, as well as amplify, RF signals. Filters enable modern wireless communication systems to support a large number of subscribers simultaneously by ensuring that the multiple transmissions and receptions of voice and data streams do not interfere with each other. We were among the first to deliver commercial film bulk acoustic resonator ("FBAR") filters that offer technological advantages over competing filter technologies, to allow mobile handsets to function more efficiently in today's congested RF spectrum. FBAR technology has a significant market share within the cellular handset market. Our RF products include FEMs that incorporate multiple die into multi-function RF devices, duplexers and multiplexers, which are a combination of two or more transmit and receive filters in a single device, using our proprietary FBAR technology, discrete filters and discrete power amplifiers.

Our expertise in FBAR technology, amplifier design, and module integration enables us to offer industry-leading performance in cellular RF transceiver applications. Our proprietary

GaAs wafer manufacturing processes are critical to the production of power amplifier and low noise amplifier products.

Connectivity Solutions: Our connectivity solutions include discrete and integrated Wi-Fi and Bluetooth solutions, and satellite-based GPS/GNSS mobile navigation receivers.

Wi-Fi allows devices on a local area network to communicate wirelessly, adding the convenience of mobility to the utility of high-speed data networks. We offer a family of high performance, low power Wi-Fi chipsets. Bluetooth is a low power technology that enables direct connectivity between devices. We offer a complete family of Bluetooth silicon and software solutions that enable manufacturers to easily and cost-effectively add Bluetooth functionality to virtually any device. These solutions include combination chips that offer integrated Wi-Fi and Bluetooth functionality, which provides significant performance advantages over discrete solutions.

We also offer a family of GPS, assisted-GPS ("A-GPS") and GNSS semiconductor products, software and data services. These products are part of a broader location platform that leverages a broad range of communications technologies, including Wi-Fi, Bluetooth and GPS, to provide more accurate location and navigation capabilities.

Custom Touch Controllers: Our touch controllers process signals from touch screens in mobile handsets and tablets.

SAS, RAID & PCIe Products: We provide SAS and RAID controller and adapter solutions to server and storage system original equipment manufacturers ("OEMs"). These solutions enable secure and high speed data transmission between a host computer, such as a server, and storage peripheral devices, such as HDD, SSD and optical disk drives and disk and tape-based storage systems. Some of these solutions are delivered as stand-alone semiconductors, typically as a controller. Other solutions are delivered as circuit boards, known as adapter products, which incorporate our semiconductors onto a circuit board with other features. RAID technology is a critical part of our server storage connectivity solutions as it provides protection against the loss of critical data resulting from HDD failures.

We also provide interconnect semiconductors that support the PCI and PCIe communication standards. PCIe is the primary interconnection mechanism inside computing systems today.

Fibre Channel Products: We provide Fibre Channel HBAs, which connect host computers such as servers to FC SANs.

HDD & SSD Products: We provide read channel-based SoCs and preamplifiers to HDD OEMs. These are the critical chips required to read, write and protect data. An HDD SoC is an integrated circuit ("IC") that combines the functionality of a read channel, serial interface, memory and a hard disk controller in a small, high-performance, low-power and cost-effective package. Read channels convert analog signals that are generated by reading the stored data on the physical media into digital signals. In addition, we sell preamplifiers, which are used to amplify the initial signal to and from the drive disk heads so the signal can be processed by the read channel.

We also provide custom flash controllers to SSD OEMs. An SSD stores data in flash memory instead of on a hard disk, providing high speed access to the data. Flash controllers manage the underlying flash memory in SSDs, performing critical functions such as reading and writing data to and from the flash memory and performing error correction, wear leveling and bad block management.

Optocouplers: We offer optical isolators, or optocouplers, which provide electrical insulation and signal isolation for signaling systems that are susceptible to electrical noise or interference. Optocouplers are used in a diverse set of applications, including industrial motors, automotive systems including those used in hybrid engines, power generation and distribution systems, switching power supplies, motion sensors, telecommunications equipment, computers and office equipment, plasma displays, and military electronics.

Industrial Fiber Optics: For industrial networking, we provide robust optical transceivers using plastic optical fiber that enable high-speed and interoperable networking and factory automation.

Motion Encoders: For industrial motors and robotic motion control, we supply optical encoders, as well as ICs for the controller and decoder functions.

LEDs: For electronic signs and signals, we supply LED assemblies that offer high brightness and stable light output over thousands of hours, enabling us to support traffic signals, large commercial signs and other displays.

Infrastructure Software

Our portfolio of mission critical software solutions enables customers to leverage the benefits of agility, automation, insights, resiliency and security in managing business processes and technology investments. Our mainframe software solutions include solutions for the IBM Z® mainframe platform, which runs many of our largest customers' mission critical business applications. These software products help customers improve economics by increasing throughput and lowering cost per transaction, increasing business agility through DevOps tooling and processes, increasing reliability and availability of operations through machine intelligence and automation solutions, and protecting enterprise data with security and compliance.

Our enterprise software solutions enable large global organizations to transform into digital businesses by providing an end-to-end digital infrastructure management platform that delivers speed, agility and the ability to optimize for risk across multi-cloud hybrid environments and workloads. More specifically, these products offer unique solutions that help with application development, testing and deployment, operations and automation, and securing users and access to information technology ("IT") infrastructure and applications. We are able to leverage our core strengths and development efforts to create products and enterprise software solutions that bring new innovation to our mainframe software solutions and vice versa, spanning three strategic portfolios: Agile, DevOps and Security.

We also offer mission critical FC SAN products designed to help customers reduce the cost and complexity of managing business information within a shared data storage environment, enabling high levels of availability of mission critical applications in the form of modules, switches and subsystems incorporating multiple semiconductor products. We deliver reliable and simplified management of these FC SAN products through our software-based management tools designed to maximize uptime, dramatically simplify storage area networking deployment and management, and provide high levels of visibility and insight into the storage network.

Table of Contents

The table below presents our software portfolios and their major offerings during fiscal year 2019.

Portfolio	Major Portfolio Offerings
• **Agile** defines how work is planned, executed and serviced to deliver rapid value to our customers, and enables customers to plan, deliver, manage and optimize application development and project management.	• Agile Planning
	• Project & Portfolio Management
• **DevOps** accelerates software delivery, enabling customers to simplify, automate, and make their processes and applications more robust, and provides customers the flexibility to optimize workloads across mobile, cloud, on-premise, and mainframe environments.	• Continuous Delivery
	• Automation
	• Agile Operations
	• Application Programming Interface ("API") Management
• **Security** provides seamless access to the right data designed to minimize the risk of data breaches.	• Application Security
	• Identity & Access Management
	• Payment Security
• **FC SAN Management**	• Fibre Channel switch

Agile Planning: This solution helps customers to collaboratively plan, prioritize and track agile software development at scale using an iterative work cadence that decreases time-to-market, increases product quality and maintains a focus on generating rapid business value.

Project & Portfolio Management: This offering is complementary to Agile Planning, enables customers to collect, prioritize, plan and deliver products, services and customer experiences.

Continuous Delivery: This offering automates the deployment of applications across all stages of their lifecycles enabling the development, testing and release teams to work concurrently and continuously.

Automation: We provide end-to-end automation capabilities that cover service orchestration, workload automation and release automation capabilities, accelerating the entire application delivery process.

Agile Operations: We provide intelligent analytics, comprehensive coverage, and an open, extensible architecture that helps customers correlate end-user, application and infrastructure data from cloud-hosted containers to mainframes.

API Management: This solution facilitates the creation, security and management of APIs through their lifecycle, enabling customers to connect more directly with end-users via mobile apps, cloud platforms and IoT devices.

Application Security: This solution is hosted on a unified application security testing platform and integrates into existing development toolchains. This enables users to quickly identify and remediate security flaws earlier in the development process and supports the development of high-quality, secure code.

Identity & Access Management: We provide enterprise-grade identity management and governance capabilities, including broad provisioning support for on-premises and cloud-based applications, extensibility and flexibility to integrate with other IT systems and control and monitor the access and activity of privileged users.

Payment Security: This is a software as a service ("SaaS")-based payment authentication service to help banks protect against fraud and ensure a hassle-free online shopping experience for their customers.

Fibre Channel Switch Products: The Fibre Channel switch products we acquired in connection with our acquisition of Brocade provide interconnection, bandwidth, and high-speed switching between servers and storage devices which are in a FC SAN. FC SANs are networks dedicated to mission critical storage traffic, and enable simultaneous high speed and secure connections among multiple host computers and multiple storage arrays.

Research and Development

We are committed to continuous investment in product development and enhancement, with a focus on rapidly introducing new, proprietary products and releases. Many of our products have grown out of our own research and development efforts, and have given us competitive advantages in certain target markets due to performance differentiation. However, we opportunistically seek to enhance our capabilities through the acquisition of engineers with complementary research and development skills and complementary technologies and businesses. We focus our research and development efforts on the development of mission critical, innovative, sustainable and higher value product platforms and those that improve the quality and stability in our broadly deployed products. We leverage our design capabilities in markets where we believe our innovation and reputation will allow us to earn attractive margins by developing high value-add products.

We plan to continue investing in product development, both organically and through acquisitions, to drive growth in our business. We also invest in process development and improvements to product features and functions, as well as fabrication capabilities to optimize processes for devices that are manufactured internally. Our field application engineers, design engineers, and product and software development engineers are located in many places around the world, and in many cases near our top customers. This enhances our customer reach and our visibility into new product opportunities and, in the case of our semiconductor customers, enables us to support our customers in each stage of their product development cycle, from the early stages of production design to volume manufacturing and future growth. By collaborating with our customers, we have opportunities to develop high value-added, customized products for them that leverage our existing technologies. We anticipate that we will continue to make significant research and development expenditures in order to maintain our competitive position, and to ensure a continuous flow of innovative and sustainable product platforms.

Customers, Sales and Distribution

We sell our products through our direct sales force and a select network of distributors and channel partners globally. Distributors and OEMs, or their contract manufacturers, typically account for the substantial majority of our semiconductor sales. Historically, a relatively small number of customers have accounted for a significant portion of our net revenue. Sales to distributors accounted for 46% and 34% of our net revenue for fiscal years 2019 and 2018, respectively. Direct sales to WT Microelectronics accounted for 17% of our net revenue for the fiscal year 2019. We believe our aggregate sales to our top five end customers, through all channels, accounted for more than 30% and more than 40% of our net revenue for fiscal years 2019 and 2018, respectively. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 20% of our net revenue for fiscal year 2019 and approximately 25% for fiscal year 2018. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

Many of our semiconductor customers design products in North America or Europe that are then manufactured in Asia. To serve customers around the world, we have strategically developed relationships with large global electronic component distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges. We also sell our products to a wide variety of OEMs or their contract manufacturers. We have established strong relationships with leading OEM customers across multiple target markets. Our direct sales force focuses on supporting our large OEM customers, and has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer's organization. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers. Many of our major customer relationships have been in place for many years and are often the result of years of collaborative product development. This has enabled us to build our extensive IP portfolio and develop critical expertise regarding our customers' requirements, including substantial system-level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. Many of our customers and their contract manufacturers often require time critical delivery of our products to multiple locations around the world. With sales offices located in various countries, our primary warehouse in Malaysia, and dedicated regional customer support call centers, where we address customer issues and handle logistics and other order fulfillment requirements, we believe we are well-positioned to support our customers throughout the design, technology transfer and manufacturing stages across all geographies.

Our software customers are in most major industries worldwide, including banks, insurance companies, other financial services providers, government agencies, global IT service providers, telecommunication providers, transportation companies, manufacturers, technology companies, retailers, educational organizations and health care institutions. Our traditional software customers generally consist of large enterprises that have computing environments from multiple vendors and are highly complex. We remain focused on strengthening relationships and increasing penetration within our existing core, mainframe-centric customers and expanding the adoption of our enterprise software offerings with these customers. We believe our enterprise-wide license model will continue to offer our customers reduced complexity, more flexibility and an easier renewal process that will help drive revenue growth.

Manufacturing Operations

We focus on maintaining an efficient global supply chain and a variable, low-cost operating model. Accordingly, we outsource a majority of our manufacturing operations, utilizing third-party foundry and assembly and test capabilities, as well as some of our corporate infrastructure functions. The majority of our front-end wafer manufacturing operations is outsourced to external foundries, including Taiwan Semiconductor Manufacturing Company Limited ("TSMC"), primarily, as well as United Microelectronics Corporation, GlobalFoundries, Silicon Manufacturing Partners Pte. Ltd., Tower Semiconductor Ltd. and WIN Semiconductors Corp. We use third-party contract manufacturers for a significant majority of our assembly and test operations, including Advanced Semiconductor Engineering, Inc., Foxconn Technology Group, Amkor Technology, Inc. and Siliconware Precision Industries Co., Ltd. We use our internal fabrication facilities for products utilizing our innovative and proprietary processes, to protect our IP and to accelerate time to market for our products, while outsourcing commodity processes such as standard CMOS. Examples of internally fabricated semiconductors include our FBAR filters for wireless communications and our vertical-cavity surface emitting laser and side emitting lasers-based on GaAs and InP lasers for fiber optic communications. The majority of our internal III-V semiconductor wafer fabrication is done in the U.S. and Singapore. Many of our products are designed to be manufactured in a specific process, typically at one particular foundry, either our own or with a particular contract manufacturer, and in some instances, we may only qualify one contract manufacturer to manufacture certain of our products.

We also have a long history of operating in Asia, where approximately 35% of our employees are located and where we manufacture and source the majority of our products and materials. We store the majority of our product inventory in our warehouse in Malaysia and our presence in Asia places us in close proximity to many of our customers' manufacturing facilities and at the center of worldwide electronics manufacturing.

Manufacturing Materials and Suppliers

Our manufacturing operations employ a wide variety of semiconductors, electromechanical components and assemblies and raw materials. We purchase materials from hundreds of suppliers on a global basis. These supply relationships are generally conducted on a purchase order basis. While we have not experienced any significant difficulty in obtaining the materials used in the conduct of our business and we believe that no single supplier is material, some of the parts are not readily available from alternate suppliers due to their unique design or the length of time necessary for re-design or qualification. Our long-term relationships with our suppliers allow us to proactively manage our technology development and product discontinuance plans, and to monitor our suppliers' financial health. Some suppliers may, nonetheless, extend their lead times, limit supplies, increase prices or cease to produce necessary parts for our products. If these are unique or highly specialized components, we may not be able to find a substitute quickly, or at all. To address the potential disruption in our supply chain, we may use a number of techniques, including, in some cases, qualifying more than one source of supply, redesigning products for alternative components and incremental, or in some cases, "lifetime" purchases of affected parts for supply buffer.

Competition

The markets in which we participate are highly competitive. Our competitors range from large, international companies offering a wide range of products to smaller companies specializing in narrow markets. The competitive landscape is changing as a result of a trend toward consolidation within many industries, as some of our competitors have merged with or been acquired by other competitors, while others have begun collaborating with each other. We expect this consolidation trend to continue. We expect competition in the markets in which we participate to continue to increase as existing competitors improve or expand their product offerings and as new companies enter the market. Additionally, our ability to compete effectively depends on a number of factors, including: quality, technical performance, price, product features, product system compatibility, system-level design capability, engineering expertise, responsiveness to customers, new product innovation, product availability, delivery timing and reliability, and customer sales and technical support.

In the semiconductor market, we compete with integrated device manufacturers, fabless semiconductor companies, as well as the internal resources of large, integrated OEMs. Our primary competitors are Analog Devices, Inc., Cisco Systems, Inc., Cree, Inc., Finisar Corp., GlobalFoundries, Hamamatsu Photonics K.K., Heidenhain Corporation, HiSilicon Technologies Co. Ltd., Intel Corp., Lumentum Operations LLC, MACOM Technology Solutions Holdings, Inc., Marvell Technology Group, Ltd., Mediatek Inc., Mellanox Technologies, Inc., Microsemi Corp., Mitsubishi Electric Corporation, Murata Manufacturing Co., Ltd., NXP Semiconductors N.V., Qorvo, Inc., Qualcomm Inc., Quantenna Communications, Inc. (acquired by ON Semiconductor Corporation), ST Microelectronics N.V., Renesas Electronics Corporation, Skyworks Solutions, Inc., Sumitomo Corporation, TDK-EPC Corporation, Toshiba Corporation, and Texas Instruments, Inc. We compete based on the strength and expertise of our high speed proprietary design expertise, FBAR technology, amplifier design, module integration, proprietary materials processes, multiple storage protocols and mixed-signal design, our broad product portfolio, support of key industry standards, reputation for quality products, and our customer relationships.

In the infrastructure software market, we compete with large vendors of hardware and operating system software and cloud service providers, who continue to both expand their product and service offerings, and consolidate offerings into broad product lines. Our primary competitors are AppDynamics, Inc. (acquired by Cisco), Atlassian Corporation, Plc, BMC Software Inc., BeyondTrust, Compuware Corporation, CyberArk Software, Ltd., International Business Machines Corporation, Micro Focus International Plc, Microsoft Corporation, MuleSoft, Inc. (acquired by Salesforce.com, Inc.), New Relic, Inc., Oracle Corporation, SailPoint, Inc., ServiceNow, Inc., SolarWinds, Inc., Splunk, Inc. and VMware, Inc. We compete based on our breadth of portfolio of enterprise management tools, breadth and synergy of offerings, our platform and hardware independence, our global reach, and our deep customer relationships and industry experience.

Intellectual Property

Our success depends in part upon our ability to protect our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks, service marks, trade secrets and similar IP, as well as customary contractual protections with our customers, suppliers, employees and consultants, and through security measures to protect our trade secrets. We believe our current product expertise, key engineering talent and IP portfolio provide us with a strong platform from which to develop application specific products in key target markets.

As of November 3, 2019, we had 21,677 U.S. and other patents and 1,593 U.S. and other pending patent applications. Our research and development efforts presently result in approximately 100 new patent applications per year, relating to a wide range of ASIC, isolation, encoder, LED, RF and optoelectronic components, enterprise storage products, HDD silicon, PCIe, USB and other standard I/O devices, Ethernet and Fibre-Channel connectivity and controllers, set-top box SoCs, cable modem SoCs, broadband access SoCs, wireless connectivity SoCs, switching/routing SoCs, high performance processor SoCs, infrastructure software, and associated applications. The expiration dates of our patents range from 2019 to 2038, with a small number of patents expiring in the near future, none of which are expected to be material to our IP portfolio. We are not substantially dependent on any single patent or group of related patents.

We focus our patent application program to a greater extent on those inventions and improvements that we believe are likely to be incorporated into our products, as contrasted with more basic research. However, we do not know how many of our pending patent applications will result in the issuance of patents or the extent to which the examination process could require us to narrow our claims.

We and our predecessors have also entered into a variety of IP licensing and cross-licensing arrangements that have both benefited our business and enabled some of our competitors. A portion of our revenue comes from IP licensing royalty payments and from technology claim settlements relating to such IP. We also license third-party technologies that are incorporated into some elements of our design activities, products and manufacturing processes. Historically, licenses of the third-party technologies used by us have generally been available to us on acceptable terms.

The semiconductor industry is characterized by the existence of a large number of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including by patent holding companies that do not make or sell products. Many of our customer agreements require us to indemnify our customers for third-party IP infringement claims. Claims of this sort could harm our relationships with our customers and might deter future customers from doing business with us. With respect to any IP rights claims against us or our customers or distributors, we may be required to cease manufacture of the infringing product, pay damages, expend resources to develop non-infringing technology, seek a license which may not be available on commercially reasonable terms or at all, or relinquish patents or other IP rights.

With respect to our infrastructure software, the source code for our products is protected both as a trade secret and as copyrighted work. Except with respect to software components that are subject to open source licenses, our customers do not generally have access to the source code for our products. Rather, on-premise customers typically access only the executable code for our products, and SaaS customers access only the functionality of our SaaS offerings. Under certain contingent circumstances, some of our customers are beneficiaries of a source code escrow arrangement that enables them to obtain a limited right to access our source code.

Employees

As of November 3, 2019, we had approximately 19,000 employees worldwide. By geography, approximately 53% of our employees are located in North America, 35% in Asia, and 12% in Europe, the Middle East and Africa. In the U.S., none of our employees are represented by a labor union. A small number of our employees in other countries are represented by workers' councils or labor unions or are party to collective bargaining agreements.

Environmental and Other Regulation

Our semiconductor manufacturing operations and research and development involve the use of hazardous substances and are regulated under international, federal, state and local laws governing health, safety and the environment. These regulations include limitations on discharge of pollutants to air, water, and soil; remediation requirements; product chemical content limitations; manufacturing chemical use and handling restrictions; pollution control requirements; waste minimization considerations; and treatment, transport, storage and disposal of solid and hazardous wastes. We are also subject to regulation by the United States Occupational Safety and Health Administration and similar health and safety laws in other jurisdictions.

We believe that our properties and operations at our facilities comply in all material respects with applicable environmental laws and worker health and safety laws. However, the risk of environmental liabilities cannot be completely eliminated and there can be no assurance that the application of environmental, health and safety laws to our business will not require us to incur significant expenditures.

We are also regulated under a number of international, federal, state and local laws regarding recycling, product packaging and product content requirements, including legislation enacted in the U.S., European Union and China, among a growing number of jurisdictions, which have placed greater restrictions on the use of lead, among other chemicals, in electronic products, which affects materials composition and semiconductor packaging. These laws are becoming more stringent and may in the future cause us to incur significant expenditures.

Backlog

Our semiconductor sales are generally made pursuant to short-term purchase orders. These purchase orders are made without deposits and may be, and often are, rescheduled, cancelled or modified on relatively short notice, without substantial penalty. In addition, our mainframe and enterprise software contracting model for the majority of our customers, which are for enterprise-wide licenses, provide for termination thereof by our customers at any time for any reason. As a result, we recognize revenue from these contracts ratably over time. Therefore, we believe that purchase orders or backlog are not necessarily a reliable indicator of future sales.

Seasonality

Historically, our net revenue has typically been higher in the second half of the fiscal year than in the first half, primarily due to seasonality in our wireless communications products. These products have historically experienced seasonality due to launches of new mobile handsets manufactured by our OEM customers. However, from time to time, typical seasonality and industry cyclicality are overshadowed by other factors such as wider macroeconomic effects, the timing of significant product transitions and launches by large OEMs, particularly with our wireless communications products. We have a diversified business portfolio and we believe that our overall revenue is less susceptible to seasonal variations as a result of this diversification.

Other Information

Broadcom was incorporated in Delaware in January 2018 and our headquarters are in San Jose, California. The address of our headquarters is 1320 Ridder Park Drive, San Jose, California 95131, and our telephone number there is (408) 433-8000. Our website is www.broadcom.com. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and other reports (and amendments thereto) filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the Securities and Exchange Commission ("SEC"), as well as proxy statements filed by Broadcom, free of charge at the "Investor Center - SEC Filings" section of our website at www.broadcom.com, as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. Such periodic reports, proxy statements and other information are also available at the SEC's website at http://www.sec.gov. The reference to our website address does not constitute incorporation by reference of the information contained on or accessible through our website.

ITEM 1A. RISK FACTORS

Our business, operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock and preferred stock. The following important factors, among others, could cause our actual results to differ materially from historical results and those expressed in forward-looking statements made by us or on our behalf in filings with the SEC, press releases, communications with investors and oral statements.

Risks Related to Our Business

The majority of our sales come from a small number of customers and a reduction in demand or loss of one or more of our significant customers may adversely affect our business.

We are dependent on a small number of end customers, OEMs, their respective contract manufacturers, and certain distributors for a majority of our business, revenue and results of operations. For fiscal years 2019 and 2018, sales to distributors accounted for 46% and 34% of our net revenue, respectively. Direct sales to WT Microelectronics accounted for 17% of our net revenue for fiscal year 2019. We believe our aggregate sales to our top five end customers, through all channels, accounted for more than 30% and more than 40% of our net revenue for fiscal years 2019 and 2018, respectively. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 20% of our net revenue for fiscal year 2019 and approximately 25% for fiscal year 2018. This customer concentration increases the risk of quarterly fluctuations in our operating results and our sensitivity to any material, adverse developments experienced by our significant customers.

In addition, our top customers' purchasing power has, in some cases, given them the ability to make greater demands on us with regard to pricing and contractual terms in general. We expect this trend to continue, which may adversely affect our gross margin on certain products and, should we fail to comply with such terms, might also result in substantial liability that could harm our business, financial condition and results of operations.

Moreover, the terms and conditions under which we do business with most of our semiconductor customers generally do not include commitments by those customers to purchase any specific quantities of products from us. Even in those instances where we enter into an arrangement under which a customer agrees to source an agreed portion of its product needs from us (provided that we are able to meet specified development, supply and quality commitments), the arrangement often includes pricing schedules or methodologies that apply regardless of the volume of products purchased, and those customers may not purchase the amount of product we expect. As a result, we may not generate the amount of revenue or the level of profitability we expect under such arrangements. If we do not perform under these arrangements, we could also be liable for significant monetary damages. In addition, we are selling an increasing amount of our semiconductor products through a limited number of distributors, which may expose us to additional customer concentration and related credit risks.

The loss of, or any substantial reduction in sales to, any of our major customers could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Dependence on contract manufacturing and suppliers of critical components within our supply chain may adversely affect our ability to bring products to market, damage our reputation and adversely affect our results of operations.

We operate a primarily outsourced manufacturing business model that principally utilizes third-party wafer foundry and module assembly and test capabilities, referred to as contract manufacturers. Our semiconductor products require semiconductor wafer manufacturers with state-of-the-art fabrication equipment and techniques, and most of our products are designed to be manufactured in a specific process, typically at one particular fab or foundry, either our own or with a particular contract manufacturer.

We depend on our contract manufacturers to allocate sufficient manufacturing capacity to meet our needs, to produce products of acceptable quality at acceptable yields, and to deliver those products to us on a timely basis. Although we often have long-term contracts with our contract manufacturers, we do not generally have long-term capacity commitments. We obtain substantially all of our manufacturing services on a purchase order basis and our contract manufacturers have no obligation to provide us with any specified minimum quantities of product. Further, from time to time, our contract manufacturers will cease to, or will become unable to, manufacture a component for us. As the lead time needed to identify, qualify and establish reliable production at acceptable yields, with a new contract manufacturer is typically lengthy, there is often no readily available alternative source for the wafers or other contract manufacturing services we require, and there may be other constraints on our ability to change contract manufacturers. In addition, qualifying such contract manufacturers is often expensive, and they may not produce products as cost-effectively as our current suppliers, which would reduce our margins. In any such circumstances, we may be unable to meet our customer demand and may fail to meet our contractual obligations. This could result in the payment of significant damages by us to our customers, and our net revenue could decline, adversely affecting our business, financial condition and results of operations.

We utilize TSMC to produce the substantial majority of our semiconductor wafers. TSMC manufactured approximately 85% of the wafers manufactured by our contract manufacturers during fiscal year 2019. Our wafer requirements represent a significant portion of the total production capacity of TSMC. However, TSMC also fabricates wafers for other companies, including certain of our competitors, and could choose to prioritize capacity for other customers or reduce or eliminate deliveries to us on short notice, or raise their prices to us, all of which could harm our business, results of operations and gross margin.

Any substantial disruption in TSMC’s supply of wafers to us, or in the other contract manufacturing services that we utilize, as a result of a natural disaster, political unrest, military conflict, economic instability, equipment failure or other cause, could materially harm our business, customer relationships and results of operations.

We also depend on our contract manufacturers to timely develop new, advanced manufacturing processes, including, in the case of wafer fabrication, transitions to smaller geometry process technologies. If these new processes are not timely developed or we do not have sufficient access to them, we may be unable to maintain or increase our manufacturing efficiency to the same extent as our competitors or to deliver products to our customers, which could result in loss of revenue opportunities and damage our relationships with our customers.

We purchase a significant amount of the materials used in our products from a limited number of suppliers.

Our manufacturing processes and those of our contract manufacturers rely on many materials, including silicon, gallium arsenide and indium phosphide wafers, copper lead frames, precious and rare earth metals, mold compound, ceramic packages and various chemicals and gases. We purchase a significant portion of our semiconductor materials, components and finished goods used in our products from a few materials providers, some of which are single source suppliers. During the fiscal year 2019, we purchased more than two-thirds of the materials for our manufacturing processes from five materials providers. Substantially all of our purchases are on a purchase order basis, and we do not generally have long-term contracts with our materials providers. Suppliers may extend lead times, limit supplies or increase prices due to commodity price increases, capacity constraints or other factors, which may lead to interruption of supply or increased demand in the industry. In the event that we cannot timely obtain sufficient quantities of materials or at reasonable prices, the quality of the material deteriorates or we are not able to pass on higher materials or energy costs to our customers, our business, financial condition and results of operations could be adversely impacted.

Adverse global economic conditions could have a negative effect on our business, results of operations and financial condition and liquidity.

A general slowdown in the global economy or in a particular region or industry, an increase in trade tensions with U.S. trading partners or a tightening of the credit markets could negatively impact our business, financial condition and liquidity. Adverse global economic conditions have from time to time caused or exacerbated significant slowdowns in the industries and markets in which we operate, which have adversely affected our business and results of operations. In recent periods, investor and customer concerns about the global economic outlook have adversely affected market and business conditions in general. Macroeconomic weakness and uncertainty also make it more difficult for us to accurately forecast revenue, gross margin and expenses, and may make it more difficult to raise or refinance debt. An escalation of recent trade tensions between the U.S. and China has resulted in trade restrictions and increased tariffs that harm our ability to participate in Chinese markets or compete effectively with Chinese companies. Sustained uncertainty about, or worsening of, current global economic conditions and further escalation of trade tensions between the U.S. and its trading partners, especially China, could result in a global economic slowdown and long-term changes to global trade. Such events may also (i) cause our customers and consumers to reduce, delay or forgo technology spending, (ii) result in customers sourcing products from other suppliers not subject to such restrictions or tariffs, (iii) lead to the insolvency or consolidation of key suppliers and customers, and (iv) intensify pricing pressures. Any or all of these factors could negatively affect demand for our products and our business, financial condition and results of operations.

Our business, financial condition and results of operations could be adversely affected by the political and economic conditions of the countries in which we conduct business and other factors related to our international operations.

A majority of our products are produced, sourced and sold internationally and our international revenue represents a significant percentage of our overall revenue. In addition, as of November 3, 2019, approximately 51% of our employees are located outside the U.S. Multiple factors relating to our international operations and to particular countries in which we operate could have a material adverse effect on our business, financial condition and results of operations. These factors include:

- changes in political, regulatory, legal or economic conditions or geopolitical turmoil, including terrorism, war or political or military coups, or civil disturbances or political instability;

- restrictive governmental actions, such as restrictions on the transfer or repatriation of funds and foreign investments, data privacy regulations and trade protection measures, including increasing protectionism, import/export restrictions, import/export duties and quotas, trade sanctions and customs duties and tariffs, all of which have increased under the current U.S. administration;
- difficulty in obtaining product distribution and support, and transportation delays;
- potential inability to localize software products for a significant number of international markets;
- difficulty in conducting due diligence with respect to business partners in certain international markets;
- public health or safety concerns;
- nationalization of businesses and expropriation of assets; and
- changes in tax laws.

A significant legal risk associated with conducting business internationally is compliance with the various and differing laws and regulations, including anti-corruption and anti-bribery laws and regulations, of the countries in which we do business, antitrust and competition laws, data privacy laws, money-laundering regulations and export regulations. In addition, the laws in various countries are constantly evolving and may, in some cases, conflict with each other. Although our Code of Ethics and Business Conduct and other policies prohibit us, our employees and our agents from engaging in unethical business practices, there can be no assurance that all of our employees, distributors or other agents will refrain from acting in violation of our related anti-corruption policies and procedures. Any such violation could have a material adverse effect on our business.

We may pursue acquisitions, investments, joint ventures and dispositions, which could adversely affect our results of operations.

Our growth strategy includes the acquisition of, and investment in, businesses that offer complementary products, services and technologies, augment our market coverage, or enhance our technological capabilities, such as our recent acquisition of the Symantec Business. We may also enter into strategic alliances or joint ventures to achieve these goals. We may not be able to identify suitable acquisition, investment, alliance, or joint venture opportunities, or to consummate any such transactions. In addition, our original estimates and assumptions used in assessing any transaction may be inaccurate and we may not realize the expected financial or strategic benefits of any such transaction, including our recent acquisition of the Symantec Business.

Any acquisitions we may undertake and their integration, including our recent acquisition of the Symantec Business, involve risks and uncertainties, such as:

- unexpected delays, challenges and related expenses, and disruption of our business;
- diversion of management’s attention from daily operations and the pursuit of other opportunities;
- our ability to effectively identify and timely transfer acquired assets and liabilities;
- the need to assign or novate acquired customer contracts;

- our ability to identify and directly hire acquired company or business employees;

- our ability to identify, manage and coordinate the performance of acquired company or business personnel providing services to us on a transitional basis or under third party transition services agreements;

- incurring significant restructuring charges and amortization expense, assuming liabilities and ongoing lawsuits, potential impairment of acquired goodwill and other intangible assets, and increasing our expenses and working capital requirements;

- implementing our management information systems, operating systems and internal controls for the acquired operations;

- our due diligence process may fail to identify significant issues with the acquired company's products, financial disclosures, accounting practices, legal, tax and other contingencies, compliance with local laws and regulations (and interpretations thereof) in multiple international jurisdictions, as well as compliance with U.S. laws and regulations;

- additional acquisition-related debt, which could increase our leverage and potentially negatively affect our credit ratings resulting in more restrictive borrowing terms or increased borrowing costs thereby limiting our ability to borrow; and

- dilution of stock ownership of existing stockholders.

In addition, regulatory approvals required in connection with an acquisition, such as those from the U.S. Department of Justice, the U.S. Federal Trade Commission ("FTC"), the European Commission Directorate-General for Competition or, where applicable, the China State Administration for Market Regulation, may take longer than anticipated to obtain, may not be obtained at all or may contain materially burdensome conditions. If any conditions or changes to the structure of an acquisition are required to obtain these regulatory approvals, they may have the effect of jeopardizing or delaying completion of such acquisition or reducing our anticipated benefits of the transaction. If we agree to any material conditions in order to obtain any such approvals or if we fail to comply with any such conditions, our business and results of operations may be adversely affected.

These difficulties may be complicated by factors such as the size of the business or entity acquired, geographic and cultural differences, lack of experience operating in the industry or geographic markets of the acquired business, potential loss of key employees and customers, the potential for deficiencies in internal controls at the acquired or combined business, performance problems with the acquired business' technology, failure to realize the benefits of transition services arrangements, exposure to unanticipated liabilities of the acquired business, insufficient revenue to offset increased expenses associated with the acquisition, adverse tax consequences and our potential inability to achieve the growth prospects or synergies expected from any such acquisition.

If we fail to complete an announced acquisition, our stock price could fall to the extent the price reflects an assumption that such acquisition will be completed, and we may incur significant unrecoverable costs. Further, the failure to consummate an acquisition may result in negative publicity and adversely impact our relationships with our customers, vendors and employees. We may become subject to legal proceedings relating to the acquisition and the integration of acquired businesses may not be successful. Failure to manage and successfully integrate acquired businesses, achieve anticipated levels of profitability of the acquired business, improve margins of the acquired businesses and products, or realize other anticipated benefits of an acquisition could materially harm our business, operating results and margins.

From time to time, we may also seek to divest or wind down portions of our business, either acquired or otherwise, or we may exit minority investments, each of which could materially affect our cash flows and results of operations. Any future dispositions we may make could involve risks and uncertainties, including our ability to sell such businesses on terms acceptable to us, or at all. In addition, any such dispositions could result in disruption to other parts of our business, potential loss of employees or customers, or exposure to unanticipated liabilities or ongoing obligations to us following any such dispositions. For example, in connection with such dispositions, we often enter into transition services agreements or other strategic relationships, including long-term research and development arrangements and sales arrangements, or agree to provide certain indemnities to the purchaser, which may result in additional expenses and may adversely affect our financial condition and results of operations. In addition, dispositions may include the transfer of technology and/or the licensing of certain IP rights to third-party purchasers, which could limit our ability to utilize such IP rights or assert these rights against such third-party purchasers or other third parties.

Our business is subject to various governmental regulations, and compliance with these regulations may cause us to incur significant expense. If we fail to maintain compliance with applicable regulations, we may be forced to cease the manufacture and distribution of certain products, and we could be subject to civil or criminal penalties.

Our business is subject to various international laws and other legal requirements, including packaging, product content, labor and import/export regulations, such as the U.S. Export Administration Regulations, and applicable executive orders, and many of our semiconductor products are regulated or sold into regulated industries. These laws, regulations and orders are complex, may change frequently and with limited notice, have generally become more stringent over time and have intensified under the current U.S. administration, especially in light of recent trade tensions with China. We may be required to incur significant expense to comply with, or to remedy violations of, these regulations. In addition, if our customers fail to comply with these regulations, we may be required to suspend sales to these customers, which could damage our reputation and negatively impact our results of operations. For example, on May 15, 2019, the U.S. Department of Commerce added Huawei Technologies Co. Ltd., one of our customers, to its "Entity List" and placed certain export restrictions on Huawei and its suppliers, which required us to suspend certain sales to Huawei during the pendency of such restrictions and which has had a corresponding adverse effect on our revenue.

In addition, the manufacture and distribution of our semiconductors must comply with various laws and adapt to changes in regulatory requirements as they occur. For example, if a country in which our products are manufactured or sold sets technical standards that are not widely shared, it may require us to stop distributing our products commercially until they comply with such new standards, lead certain of our customers to suspend imports of their products into that country, require manufacturers in that country to manufacture products with different technical standards and disrupt cross-border manufacturing relationships, any of which could have a material adverse effect on our business, financial condition and results of operations. If we fail to comply with these requirements, we could also be required to pay civil penalties or face criminal prosecution. In addition, it is expected that the current U.S. administration's trade policy will promote U.S. manufacturing and manufacturers. It is unclear what effect this will have on us as a multinational company that conducts business world-wide, or on our suppliers, customers, contract manufacturers and OEMs.

Our products and operations are also subject to the rules of industrial standards bodies, like the International Standards Organization, as well as regulation by other agencies, such as the FTC. If we fail to adequately address any of these rules or regulations, our business could be harmed.

We are subject to risks associated with our distributors and other channel partners, including product inventory levels and product sell-through.

We sell our products through a direct sales force and a select network of distributors and other channel partners globally. Sales to distributors accounted for 46% of our net revenue in fiscal year 2019 and are subject to a number of risks, including:

- fluctuations in demand based on our distributors' product inventory levels and end customer demand in a given quarter;
- our distributors and other channel partners are generally not subject to minimum sales requirements or any obligation to market our products to their customers;
- our distributors and other channel partners agreements are generally nonexclusive and may be terminated at any time without cause;
- our lack of control over the timing of delivery of our products to end customers;
- our distributors and other channel partners may market and distribute competing products and may, from time to time, place greater emphasis on the sale of these products due to pricing, promotions and other terms offered by our competitors; and
- dependence on a limited number of semiconductor distributors may exacerbate the foregoing risks and increase our related credit risk.

One of our significant distributors, Tech Data Corporation, recently agreed to be acquired by a private equity firm, which may result in a change in their operations, business focus and financial capacity. If and when completed, this could adversely affect our relationship with, and ability to sell products to, them.

We do not always have a direct relationship with the end customers of our products. As a result, our semiconductor products may be used in applications for which they were not necessarily designed or tested, including, for example, medical devices, and they may not perform as anticipated in such applications. In such event, failure of even a small number of parts could result in significant liabilities to us, damage our reputation and harm our business and results of operations.

Our business would be adversely affected by the departure of existing members of our senior management team.

Our success depends, in large part, on the continued contributions of our senior management team, and in particular, the services of Mr. Hock E. Tan, our President and Chief Executive Officer. Effective succession planning is also important for our long-term success. Failure to ensure effective transfers of knowledge and smooth transitions involving senior management could hinder our strategic planning and execution. None of our senior management is bound by written employment contracts. In addition, we do not currently maintain key person life insurance covering our senior management. The loss of any of our senior management could harm our ability to implement our business strategy and respond to the rapidly changing market conditions in which we operate.

If we are unable to attract and retain qualified personnel, especially our engineering and technical personnel, we may not be able to execute our business strategy effectively.

Our future success depends on our ability to retain, attract and motivate qualified personnel. We also seek to acquire talented engineering and technical personnel (including cybersecurity experts), as well as effective sales professionals, through acquisitions we may make from time to time or otherwise. We have historically encountered some difficulties in hiring and retaining qualified engineers, particularly in Silicon Valley and Southeast Asia where qualified engineers are in high demand. In addition, current or future immigration laws may make it more difficult to hire or retain qualified engineers, further limiting the pool of available talent. Further, our employees, including employees whom we have retained as a result of an acquisition, may decide not to continue working for us and may leave with little or no notice. As the source of our technological and product innovations, our engineering and technical personnel are a significant asset. We have granted multi-year equity awards to most of our employees. These awards approximate four consecutive annual grants that vest in four tranches with successive four-year vesting periods. While we believe these awards provide a powerful long-term retention incentive to employees, we may be incorrect in this assumption, particularly if there is a material and persistent decline in the price of our stock. In addition, we may be unable to obtain required stockholder approvals of future equity compensation plans. As a result, we may be limited in granting equity-based incentives and may impair our efforts to attract and retain necessary personnel. Any inability to retain, attract or motivate such personnel could have a material adverse effect on our business, financial condition and results of operations.

We may be involved in legal proceedings, including IP, anti-competition and securities litigation, employee-related claims and regulatory investigations, which could, among other things, divert efforts of management and result in significant expense and loss of our IP rights.

We are often involved in legal proceedings, including cases involving our IP rights and those of others, anti-competition and commercial matters, acquisition-related suits, securities class action suits, employee-related claims and other actions. Some of these actions may seek injunctive relief, including injunctions or exclusion orders against the sale of our products and substantial monetary damages, which if granted or awarded could materially harm our business, financial condition and results of operations. From time to time, we may also be involved or required to participate in regulatory investigations or inquiries, such as the ongoing investigations by the FTC and the European Commission into certain of our contracting practices, which may evolve into legal or other administrative proceedings. Litigation or settlement of such actions, regardless of their merit, or involvement in regulatory investigations or inquiries, can be complex, can extend for a protracted period of time, can divert the efforts and attention of our management and technical personnel, and is frequently costly, with the related expenditures unpredictable. An unfavorable resolution of a governmental investigation may include, among others, fines or other orders to disgorge profits or make other payments, and/or the issuance of orders to cease certain conduct and/or modify our contracting practices, any or all of which could materially adversely affect our reputation and our business, financial condition and results of operations.

The industries in which we operate are characterized by companies holding large numbers of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including actions by patent-holding companies that do not make or sell products. From time to time, third parties assert against us and our customers and distributors their patent, copyright, trademark, trade secret and other IP rights to technologies that are important to our business.

Many of our customer agreements, and in some cases our asset sale agreements, and/or the laws of certain jurisdictions may require us to indemnify our customers or purchasers for third-party IP infringement claims, including costs to defend those claims, and payment of damages in the case of adverse rulings. However, our contract manufacturers and suppliers may or may not be required to indemnify us should we or our customers be subject to such third-party claims. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. We do not know whether we will prevail in such proceedings, given the complex technical issues and inherent uncertainties in IP litigation. If any pending or future proceedings result in an adverse outcome, we could be required to:

- cease the manufacture, use or sale of the infringing products, processes or technology and/or make changes to our processes or products;
- pay substantial damages for past, present and future use of the infringing technology;
- expend significant resources to develop non-infringing technology;
- license technology from the third-party claiming infringement, which license may not be available on commercially reasonable terms, or at all;
-

enter into cross-licenses with our competitors, which could weaken our overall IP portfolio and our ability to compete in particular product categories;

- indemnify our customers or distributors and/or recall, or accept the return of, infringing products;

- pay substantial damages to our direct or end customers to discontinue use or replace infringing technology with non-infringing technology; or

- relinquish IP rights associated with one or more of our patent claims, if such claims are held invalid or otherwise unenforceable.

Any of the foregoing results could have a material adverse effect on our business, financial condition and results of operations.

In addition, we may be obligated to indemnify our current or former directors or employees, or former directors or employees of companies that we have acquired, in connection with litigation or regulatory investigations. These liabilities could be substantial and may include, among other things, the cost of defending lawsuits against these individuals, as well as stockholder derivative suits; the cost of government, law enforcement or regulatory investigations; civil or criminal fines and penalties; legal and other expenses; and expenses associated with the remedial measure, if any, which may be imposed.

Our operating results are subject to substantial quarterly and annual fluctuations.

Our operating results have fluctuated in the past and are likely to fluctuate in the future. These fluctuations may occur on a quarterly and annual basis and are due to a number of factors, many of which are beyond our control. These factors include, among others:

- customer concentration and the gain or loss of significant customers;
- the timing of launches by our customers of new products, such as mobile handsets, in which our products are included and changes in end-user demand for the products manufactured and sold by our customers;
- changes in our product mix or customer mix and their effect on our gross margin;
- the shift to cloud-based IT solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers;
- the timing of receipt, reduction or cancellation of significant product orders by customers;
- the timing of new software contracts and renewals, as well as the timing of any terminations of software contracts that require us to refund to customers any pre-paid amounts under the contract, which may adversely affect our cash flows;
- fluctuations in the levels of component or product inventories held by our customers;
- utilization of our internal manufacturing facilities and fluctuations in manufacturing yields;
- our ability to successfully and timely integrate, and realize the benefits of acquisitions we may make and the timing of acquisitions or dispositions of, or making and exiting investments in, other entities, businesses or technologies;
- our ability to develop, introduce and market new products and technologies on a timely basis;
- the timing and extent of our software license and subscription revenue, and other non-product revenue, such as product development revenue and royalty and other payments from IP sales and licensing arrangements;
- new product announcements and introductions by us or our competitors;
- seasonality or other fluctuations in demand in our markets;
- IP disputes and associated litigation expense;
- timing and amount of research and development and related new product expenditures, and the timing of receipt of any research and development grant monies;
- significant warranty claims, including those not covered by our suppliers or our insurers;

- availability and cost of raw materials and components from our suppliers;

- timing of any regulatory changes, particularly with respect to trade sanctions and customs duties and tariffs, and tax reform;

- fluctuations in currency exchange and interest rates;

- changes in taxation of international businesses, which could increase our overall cash tax costs;

- changes in our tax structure or incentive arrangements, which may adversely affect our net tax expense and our cash flow in any quarter in which such an event occurs;

- loss of key personnel or the shortage of available skilled workers; and

- the effects of competitive pricing pressures, including decreases in average selling prices of our products.

The foregoing factors are often difficult to predict, and these, as well as other factors, could materially adversely affect our quarterly or annual operating results. In addition, a significant amount of our operating expenses are relatively fixed in nature due to our significant sales, research and development, and internal manufacturing overhead expenses. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. As a result, we believe that quarter-to-quarter comparisons of our revenue and operating results may not be meaningful or a reliable indicator of our future performance. If our operating results in one or more future quarters fail to meet the expectations of securities analysts or investors, a significant decline in the trading price of our common stock may occur, which may happen immediately or over time.

Failure to adjust our manufacturing and supply chain to accurately meet customer demand could adversely affect our results of operations.

We make significant decisions, including determining the levels of business that we will seek and accept, production schedules, levels of reliance on contract manufacturing and outsourcing, internal fabrication utilization and other resource requirements, based on our estimates of customer requirements. Factors that can impact our ability to accurately estimate future customer requirements include the short-term nature of many customers' commitments, our customers' ability to reschedule, cancel and modify orders with little or no notice and without significant penalty, the accuracy of our customers' forecasts and the possibility of rapid changes in demand for our customers' products, as well as seasonal or cyclical trends in their industries or the semiconductor industry.

To ensure the availability of our semiconductor products, particularly for our largest customers, we typically start manufacturing our relevant products based on our customers' forecasts, which are not binding. As a result, we incur inventory and manufacturing costs in advance of anticipated sales that may never materialize or that may be substantially lower than expected. If actual demand for our products is lower than forecast, we may also experience higher inventory carrying and operating costs and product obsolescence. Because certain of our sales, research and development, and internal manufacturing overhead expenses are relatively fixed, a reduction in customer demand may also decrease our gross margin and operating income.

Conversely, customers often require rapid increases in production on short notice. We may be unable to secure sufficient materials or contract manufacturing capacity to meet such increases in demand. This could damage our customer relationships, reduce revenue growth and margins, subject us to additional liabilities, harm our reputation, and prevent us from taking advantage of opportunities.

We operate in the highly cyclical semiconductor industry, which is subject to significant downturns.

The semiconductor industry is highly cyclical and is characterized by constant and rapid technological change and price erosion, evolving technical standards, frequent new product introductions, short product life cycles (for semiconductors and for many of the end products in which they are used) and wide 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 industry in general, and in our business in particular. Periods of industry downturns have been characterized by diminished demand for end-user products, high inventory levels and periods of inventory adjustment, under-utilization of manufacturing capacity, changes in revenue mix and accelerated 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 industry or market downturns, our net revenue may decline and our financial condition and results of operations may suffer.

Winning business in the semiconductor solutions industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.

Our semiconductor business is dependent on us winning competitive bid selection processes, known as "design wins". These selection processes are typically lengthy and can require us to dedicate significant development expenditures and scarce engineering resources in pursuit of a single customer opportunity. Failure to obtain a particular design win may prevent us from obtaining design wins in subsequent generations of a particular product. This can result in lost revenue and can weaken our position in future competitive bid selection processes.

Winning a product design does not guarantee sales to a customer or that we will realize as much revenue as anticipated, if any. A delay or cancellation of a customer's plans could materially and adversely affect our financial results, as we incur significant expense in the design process and may generate little or no revenue from it. In addition, the timing of design wins is unpredictable and implementing production for a major design win, or multiple design wins occurring at the same time, may strain our resources and those of our contract manufacturers. In such event, we may be forced to dedicate significant additional resources and incur additional, unanticipated costs and expenses. Often customers will only purchase limited numbers of evaluation units from us until they qualify the products and/or the manufacturing line for those products. The qualification process can take significant time and resources and we may not always be able to satisfy customers' qualification requirements. Delays in qualification or failure to qualify our products may cause a customer to discontinue use of our products and result in a significant loss of revenue. Finally, customers could choose at any time to stop using our products or could fail to successfully market and sell their products, which could reduce demand for our products, and cause us to hold excess inventory, materially adversely affecting our business, financial condition and results of operations. These risks are exacerbated by the fact that many of our products, and the end products into which our products are incorporated, often have very short life cycles.

Competition in our industries could prevent us from growing our revenue.

The industries in which we operate are highly competitive and characterized by rapid technological changes, evolving industry standards, changes in customer requirements, often aggressive pricing practices and, in some cases, new delivery methods. We expect competition in these industries to continue to increase as existing competitors improve or expand their product offerings or as new competitors enter our markets.

In addition, the competitive landscape is changing in these industries as a result of a trend toward consolidation. Some of our direct competitors have merged with or been acquired by other competitors. We expect this consolidation trend to continue, which may result in the combined competitors having greater manufacturing, distribution, financial, research and development or marketing resources than us. In addition, some of our competitors may also receive financial and other support from their home country government or may have a greater presence in key markets, a larger customer base or more comprehensive IP portfolio and patent protection than us.

We compete with integrated device manufacturers and fabless semiconductor companies, as well as the internal resources of large, integrated OEMs. Because our products are often building block semiconductors, providing functions that in some cases can be integrated into more complex integrated circuits ("ICs"), we also face competition from manufacturers of ICs, as well as customers that may develop their own IC products. Our competitors in these markets range from large, international companies offering a wide range of semiconductor products and devices to smaller companies specializing in niche markets and new technologies.

Our competitors also include large vendors of hardware and operating system software and cloud service providers. Some of our competitors have longer operating histories, greater name recognition, a larger installed base of customers in any particular market, larger technical staffs, more established relationships with hardware vendors, or greater financial, technical and marketing resources than us. We also face competition from numerous start-ups and smaller companies that specialize in specific aspects of the highly fragmented software industry, open source authors who may provide software and intellectual property for free, competitors who may offer their products through try-and-buy or freemium models, and customers who may develop competing products.

The actions of our competitors, in the areas of pricing and product bundling in particular, could have a substantial adverse impact on us. Further, competitors may leverage their IP or other proprietary information, including interface or interoperability information, in new and emerging technologies and platforms that may inhibit our ability to compete effectively. If we are unable to compete successfully, we may lose market share for our products or incur significant reduction in our gross margins, either of which could have a material adverse effect on our business and results of operations.

A prolonged disruption of our manufacturing facilities, research and development facilities or other significant operations, or those of our suppliers, could have a material adverse effect on our business, financial condition and results of operations.

Although we operate a primarily outsourced manufacturing business model, we also rely on our own manufacturing facilities, in particular in Fort Collins, Colorado, Singapore, and Breinigsville, Pennsylvania. We use these internal fabrication facilities for products utilizing our innovative and proprietary processes, in order to protect our IP, to accelerate time to market of our products and to ensure supply of certain components. Our Fort Collins and Breinigsville facilities are the sole sources for the film bulk acoustic resonator components used in many of our wireless devices and for the indium phosphide-based wafers used in our fibre optics products, respectively. Many of our facilities, and those of our contract manufacturers and suppliers, are located in California and the Pacific Rim region, which has above average seismic activity and severe weather activity. In addition, our research and development personnel are primarily concentrated in China, Czech Republic, India, Israel, Malaysia, Singapore, South Korea, Taiwan, Colorado, California and Pennsylvania, with the expertise of the personnel at each such location tending to be focused on one or two specific areas.

A prolonged disruption at one or more of our manufacturing facilities for any reason, especially our Colorado, Singapore and Pennsylvania facilities, or those of our contract manufacturers or suppliers, due to natural- or man-made disasters or other events outside of our control, such as equipment malfunction or widespread outbreaks of acute illness at one or more of these facilities, would limit our capacity to meet customer demands and delay new product development until a replacement facility and equipment, if necessary, were found. Any such event would likely disrupt our operations, delay production, shipments and revenue, result in us being unable to timely satisfy customer demand, expose us to claims by our customers resulting in significant expense to repair or replace our affected facilities, and, in some instances, could significantly curtail our research and development efforts in a particular product area or target market. As a result, we could forgo revenue opportunities, potentially lose market share, damage our customer relationships and be subject to litigation and additional liabilities, all of which could materially and adversely affect our business. Although we purchase insurance to mitigate certain losses, such insurance often carries a high deductible amount and any uninsured losses could negatively affect our operating results. In addition, even if we were able to promptly resume production of our affected products, if our customers cannot timely resume their own manufacturing following such an event, they may cancel or scale back their orders from us and this may in turn adversely affect our results of operations. Such events could also result in increased fixed costs relative to the revenue we generate and adversely affect our results of operations.

We may be unable to maintain appropriate manufacturing capacity at our own manufacturing facilities, which could adversely affect our relationships with our customers, and our business, financial condition and results of operations.

We must maintain appropriate capacity at our own manufacturing facilities to meet anticipated customer demand for our proprietary products. From time to time, this requires us to invest in expansion or improvements of those facilities, which often involves substantial cost and other risks, such as delays in completion. Such expanded manufacturing capacity may still be insufficient, or may not come online soon enough, to meet customer demand and we may have to put customers on product allocation, forgo sales or lose customers as a result. Conversely, if we overestimate customer demand, we would experience excess capacity and fixed costs at these facilities, all of which could adversely affect our results of operations.

Any failure of our IT systems or one or more of our corporate infrastructure vendors to provide necessary services could have a material adverse effect on our business.

We depend on various IT systems, including networks, applications, internal IT systems and personnel, and outsourced services for, among other things, financial reporting and product orders and shipments. We rely on third-party vendors to provide critical corporate infrastructure services on a timely and effective basis and to adequately address cybersecurity threats to their own systems. Services provided by these third parties include certain services related to shipping, human resources, benefit plan administration, IT network development and network monitoring. While we may be entitled to damages if our vendors fail to perform under their agreements with us, we may be unable to collect on any award of damages and any award may be insufficient to cover the actual costs we may incur as a result of a vendor’s failure to perform under its agreement with us. Upon expiration or termination of any of our third-party vendor agreements we may not be able to timely replace the vendor on terms and conditions, including service levels and costs, which are favorable to us. In addition, a transition from one vendor to another vendor could subject us to operational delays and inefficiencies until the transition is complete.

Any failure of these internal or third-party systems and services to operate effectively could disrupt our operations and could have a material adverse effect on our business, financial condition and results of operations by harming our ability to accurately forecast sales demand, manage our supply chain and production facilities, fulfill customer orders, and report financial and other information on a timely and accurate basis.

Our gross margin is dependent on a number of factors, including our product mix, price erosion, acquisitions we may make, level of capacity utilization and commodity prices.

Our gross margin is highly dependent on product mix, which is susceptible to seasonal and other fluctuations in our markets. A shift in sales mix away from our higher margin products, as well as the timing and amount of our software licensing and non-product revenue, could adversely affect our future gross margin percentages. In addition, increased competition and the existence of product alternatives, more complex engineering requirements, lower demand or reductions in our technological lead compared to our competitors, and other factors may lead to further price erosion, lower revenue and lower margin for us in the future.

Our gross margin may also be adversely affected by expenses related to the acquisitions of businesses, such as amortization of intangible assets and restructuring and impairment charges. Furthermore, businesses or companies that we acquire may have different gross margin profiles than us and could, therefore, also affect our overall gross margin.

In addition, semiconductor manufacturing requires significant capital investment, leading to high fixed costs, including depreciation expense. If we are unable to utilize our owned manufacturing facilities at a high level, the fixed costs associated with these facilities, such as depreciation expense, will not be fully absorbed, resulting in higher average unit costs and a lower gross margin. Furthermore, fluctuations in commodity prices, either directly in the price of the raw materials we buy, or as a result of price increases passed on to us by our suppliers, could negatively impact our margins. We do not hedge our exposure to commodity prices, some of which (including gold and fuel prices) are very volatile, and sudden or prolonged increases in commodities prices may adversely affect our gross margin.

We utilize a significant amount of IP in our business. If we are unable or fail to protect our IP, our business could be adversely affected.

Our success depends in part upon protecting our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks and trade secrets, as well as customary contractual protections with our customers, suppliers, employees and consultants. We may be required to spend significant resources to monitor and protect our IP rights, including unauthorized use of our products, the usage rates of the software seat licenses and subscriptions that we sell, and even with significant expenditures we may not be able to protect the IP rights that are valuable to our business. We are unable to predict or assure that:

- the IP rights that we presently employ in our business will not lapse or be invalidated, circumvented, challenged, or, in the case of third-party IP rights licensed to us, be licensed to others;

- our IP rights will provide competitive advantages to us;
- rights previously granted by third parties to IP licensed or assigned to us, including portfolio cross-licenses, will not hamper our ability to assert our IP rights against potential competitors or hinder the settlement of currently pending or future disputes;
- any of our pending or future patent, trademark or copyright applications will be issued or have the coverage originally sought;
- our IP rights will be enforced in certain jurisdictions where competition may be intense or where legal protection may be weak; or
- we have sufficient IP rights to protect our products or our business.

In addition, our competitors or others may develop products or technologies that are similar or superior to our products or technologies, duplicate our products or technologies or design around our protected technologies. Effective patent, trademark, copyright and trade secret protection may be unavailable or more limited in other jurisdictions, relative to those protections available in the U.S., and may not be applied for or may be abandoned in one or more relevant jurisdictions. We may elect to abandon or divest patents or otherwise not pursue prosecution of certain pending patent applications, due to strategic concerns or other factors. In addition, when patents expire, we lose the protection and competitive advantages they provided to us.

We also generate some of our revenue from licensing royalty payments and from technology claim settlements relating to certain of our IP. Licensing of our IP rights, particularly exclusive licenses, may limit our ability to assert those IP rights against third parties, including the licensee of those rights. In addition, we may acquire companies with IP that is subject to licensing obligations to other third parties. These licensing obligations may extend to our own IP following any such acquisition and may limit our ability to assert our IP rights. From time to time, we pursue litigation to assert our IP rights, including, in some cases, against third parties with whom we have ongoing relationships, such as customers and suppliers. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. Conversely, third parties may pursue IP litigation against us, including as a result of our IP licensing business. An adverse decision in such types of legal action could limit our ability to assert our IP rights and limit the value of our technology, including the loss of opportunities to sell or license our technology to others or to collect royalty payments based upon successful protection and assertion of our IP against others. In addition, such legal actions or adverse decisions could otherwise negatively impact our business, financial condition and results of operations.

From time to time, we may need to obtain additional IP licenses or renew existing license agreements. We are unable to predict whether these license agreements can be obtained or renewed on acceptable terms or at all.

If our software products do not remain compatible with ever-changing operating environments, platforms, or third-party products, demand for our products and services could decrease, which could materially adversely affect our business.

The largest suppliers of systems and computing software are, in most cases, the manufacturers of the computer hardware systems used by most of our customers, particularly in the mainframe space. These companies periodically modify or introduce new operating systems, systems software and computer hardware, which could require substantial modification of our products to maintain compatibility with these companies' hardware or software. Additionally, we must continually address the challenges of dynamic and accelerating market trends and competitive developments, such as the emergence of advanced persistent threats in the security space to compete effectively. Customers may require features and capabilities that our current solutions do not have. There can be no assurance that we will be able to adapt our products in response to these developments.

Further, our software solutions interact with a variety of software and hardware developed by third parties. If we lose access to third-party code and specifications for the development of code, this could negatively impact our ability to develop compatible software. In addition, if software providers and hardware manufacturers, including some of our largest vendors, adopt new policies restricting the use or availability of their code or technical documentation for their operating systems, applications, or hardware, or otherwise impose unfavorable terms and conditions for such access, this could result in higher research and development costs for the enhancement and modification of our existing products or development of new products. Any additional restrictions could materially adversely affect our business, financial condition and operating results and cash flow.

Failure to enter into software license agreements on a satisfactory basis could materially adversely affect our business.

Many of our existing customers have multi-year enterprise license agreements, some of which involve substantial aggregate fee amounts. These customers have no contractual obligation to purchase additional solutions. Customer renewal rates may decline or fluctuate as a result of a number of factors, including the level of customer satisfaction with our solutions or customer support, customer budgets and the pricing of our solutions as compared with the solutions offered by our competitors, any of which may cause our revenue to grow more slowly than expected, if at all. The failure to renew customer agreements of similar scope, on terms that are commercially attractive to us, could materially adversely affect our business, financial condition and operating results and cash flow.

Our sales to government clients subject us to uncertainties regarding fiscal funding approvals, renegotiations or terminations at the discretion of the government, as well as audits and investigations, which could result in litigation, penalties and sanctions including early termination, suspension and debarment.

Our multi-year contracts signed with the U.S. federal government and other U.S. state and local government agencies are generally subject to annual fiscal funding approval and may be renegotiated or terminated at the discretion of the government. Termination, renegotiation or the lack of funding approval for a contract could adversely affect our sales, revenue and reputation. Additionally, our government contracts are generally subject to certain requirements, some of which are generally not present in commercial contracts and/or may be complex, as well as to audits and investigations. Failure to meet contractual requirements could result in various civil and criminal actions and penalties, and administrative sanctions, including termination of contracts, refund of a portion of fees received, forfeiture of profits, suspension of payments, fines and suspensions or debarment from doing business with the government and could materially adversely affect our business, financial condition, operating results and cash flow.

Certain software that we use in our products is licensed from third parties and may not be available to us in the future, which may delay product development and production or cause us to incur additional expense.

Some of our solutions contain software licensed from third parties, some of which may not be available to us in the future on terms that are acceptable to us or allow our products to remain competitive. The loss of these licenses or the inability to maintain any of them on commercially acceptable terms could delay development of future products or the enhancement of existing products.

Certain software we use is from open source code sources, which, under certain circumstances could materially adversely affect our business, financial condition, operating results and cash flow.

Some of our products contain software from open source code sources, the use of which may subject us to certain conditions, including the obligation to offer such products for no cost or to make the proprietary source code of those products publicly available. Further, although some open source vendors provide warranty and support agreements, it is common for such software to be available "as-is" with no warranty, indemnity or support. Although we monitor our use of such open source code to avoid subjecting our products to unintended conditions, such use, under certain circumstances, could materially adversely affect our business, financial condition and operating results and cash flow, including if we are required to take remedial action that may divert resources away from our development efforts.

We are subject to warranty claims, product recalls and product liability.

From time to time, we may be subject to warranty or product liability claims that may in the future lead to significant expense. Our customer contracts typically contain warranty and indemnification provisions, and in certain cases may also contain liquidated damages provisions, relating to product quality issues. The potential liabilities associated with such provisions are significant, and in some cases, including in agreements with some of our largest customers, are potentially unlimited. Any such liabilities may greatly exceed any revenue we receive from the relevant products. Costs, payments or damages incurred or paid by us in connection with warranty and product liability claims and product recalls could materially adversely affect our financial condition and results of operations. We may also be exposed to such claims as a result of any acquisition we may undertake in the future.

Product liability insurance is subject to significant deductibles and there is no guarantee that such insurance will be available or adequate to protect against all such claims, or we may elect to self-insure with respect to certain matters. For example, it is possible for one of our customers to recall a product containing one of our semiconductor devices. In such an event, we may incur significant costs and expenses, including among others, replacement costs, contract damage claims from our customers and reputational harm. Although we maintain reserves for reasonably estimable liabilities and purchase product liability insurance, our reserves may be inadequate to cover the uninsured portion of such claims. Conversely, in some cases, amounts we reserve may ultimately exceed our actual liability for particular claims and may need to be reversed.

The complexity of our products could result in unforeseen delays or expense or undetected defects or bugs, which could adversely affect the market acceptance of new products, damage our reputation with current or prospective customers, and materially and adversely affect our operating costs.

Highly complex products, such as those we offer, may contain defects and bugs when they are first introduced or as new versions, software documentation or enhancements are released, or their release may be delayed due to unforeseen difficulties during product development. If any of our products, including the products of companies we have acquired, or third-party components used in our products, contain defects or bugs, or have reliability, quality or compatibility problems, we may not be able to successfully design workarounds. Furthermore, if any of these problems are not discovered until after we have commenced commercial production of or deployed a new product, we may be required to incur additional development costs and product recall, repair or replacement costs. Significant technical challenges also arise with our software products because our customers license and deploy our products across a variety of computer platforms and integrate them with a number of third party software applications and databases. As a result, if there is system-wide failure, it may be difficult to determine which product is at fault and we could ultimately be harmed by the failure of another supplier's product. Consequently, our reputation may be damaged and customers may be reluctant to buy our products, which could materially and adversely affect our ability to retain existing customers and attract new customers. To resolve these problems, we may have to invest significant capital and other resources. These problems may also result in claims against us by our customers or others. For example, if a delay in the manufacture and delivery of our products causes the delay of a customer's end-product delivery, we may be required, under the terms of our agreement with that customer, to compensate the customer for the adverse effects of such delays. In addition, if an actual or perceived breach of information integrity, security, or availability occurs in one of our end-user customer's systems, regardless of whether the breach is attributable to our products, the market perception of the effectiveness of our solutions could be harmed. These problems may divert our technical and other resources from other development efforts, and we would likely lose, or experience a delay in, market acceptance of the affected product or products. As a result, our financial results could be materially adversely affected.

We make substantial investments in research and development to enhance existing and develop new technologies to keep pace with technological advances and to remain competitive in our business, and unsuccessful investments could materially adversely affect our business, financial condition and results of operations.

The industries in which we compete are characterized by rapid technological change, changes in customer requirements, frequent new product introductions and enhancements, short product cycles and evolving industry standards, new delivery methods and require substantial investment in our research and development in order to develop and bring to market new and enhanced technologies and products. In addition, semiconductor products transition over time to increasingly smaller line width geometries. This requires us to adapt our products and manufacturing processes to these new technologies, which requires expertise in new procedures. Our failure to successfully transition to smaller geometry process technologies could impair our competitive position. In order to remain competitive, we have made, and expect to continue to make, significant investments in research and development. We expect the dollar amount of research and development expenses to increase for the foreseeable future, due to the increasing complexity and number of products we plan to develop. If we fail to develop new and enhanced products and technologies, if we focus on technologies that do not become widely adopted, or if new competitive technologies that we do not support become widely accepted, demand for our products may be reduced. Significant investments in unsuccessful research and development efforts could materially adversely affect our business, financial condition and results of operations. In addition, increased investments in research and development could cause our cost structure to fall out of alignment with demand for our products, which would have a negative impact on our financial results.

We collect, use, store, or otherwise process personal information, which subjects us to privacy and data security laws and contractual commitments, and our actual or perceived failure to comply with such laws and commitments could harm our business.

We collect, use and store (collectively, "process") a high volume, variety and velocity of certain personal information in connection with the operation of our business, particularly in relation to our Symantec Business. The personal information we process is subject to an increasing number of federal, state, local, and foreign laws regarding privacy and data security, as well as contractual commitments. Any failure or perceived failure by us to comply with such obligations may result in governmental enforcement actions, fines or litigation and could cause our customers to lose trust in us, which could have an adverse effect on our reputation and business.

Privacy legislation, enforcement and policy activity in this area are expanding rapidly in many jurisdictions and creating a complex regulatory compliance environment. The cost of complying with and implementing these privacy-related and data protection measures could be significant. In addition, even our inadvertent failure or perceived failure to comply with federal, state or international privacy-related or data protection laws and regulations could result in proceedings against us by governmental entities or others, and substantial fines and damages. The theft, loss or misuse of personal data collected, used, stored or transferred by us to run our business could result in significantly increased business and security costs or costs related to defending legal claims.

Further, to ensure that its products are continually enhanced to protect against constantly evolving, increasingly sophisticated and wide-spread cyber-threats, NortonLifeLock Inc. relied on threat intelligence gathered from both its consumer business and the Symantec Business. We and NortonLifeLock Inc. have agreed to continue sharing threat intelligence relating to the Symantec Business and the NortonLifeLock Inc. consumer business, respectively, following the closing of the transaction. Failure to continue to receive such threat intelligence could cause the Symantec Business products to become less effective and adversely affect our business.

We are subject to environmental, health and safety laws, which could increase our costs, restrict our operations and require expenditures that could have a material adverse effect on our results of operations and financial condition.

We are subject to a variety of international laws and regulations relating to the use, disposal, clean-up of and human exposure to, hazardous materials. Compliance with environmental, health and safety requirements could, among other things, require us to modify our manufacturing processes, restrict our ability to expand our facilities, or require us to acquire pollution control equipment, all of which can be very costly. Any failure by us to comply with such requirements could result in the limitation or suspension of the manufacture of our products and could result in litigation against us and the payment of significant fines and damages by us in the event of a significant adverse judgment. In addition, complying with any cleanup or remediation obligations for which we are or become responsible could be costly and have a material adverse effect on our business, financial condition and results of operations.

Changing requirements relating to the materials composition of our semiconductor products, including the restrictions on lead and certain other substances in electronics that apply to specified electronics products sold in various countries, including the U.S., China, Japan, and in the European Union, increase the complexity and costs of our product design and procurement operations and may require us to re-engineer our products. Such re-engineering may result in excess inventory or other additional costs and could have a material adverse effect on our results of operations. We may also experience claims from employees from time to time with regard to exposure to hazardous materials or other workplace related environmental claims.

Social and environmental responsibility regulations, policies and provisions, as well as customer demand, may make our supply chain more complex and may adversely affect our relationships with customers.

There is an increasing focus on corporate social and environmental responsibility in the semiconductor industry, particularly with OEMs that manufacture consumer electronics. A number of our customers have adopted, or may adopt, procurement policies that include social and environmental responsibility provisions that their suppliers should comply with, or they may seek to include such provisions in their procurement terms and conditions. An increasing number of participants in the semiconductor industry are also joining voluntary social responsibility initiatives such as the U.N. Global Compact, a voluntary initiative for businesses to develop, implement and disclose sustainability policies and practices. These social and environmental responsibility provisions and initiatives are subject to change, can be unpredictable, and may be difficult and expensive for us to comply with, given the complexity of our supply chain and our significant outsourced manufacturing. If we are unable to comply, or are unable to cause our suppliers or contract manufacturers to comply, with such policies or provisions, a customer may stop purchasing products from us, and may take legal action against us, which could harm our reputation, revenue and results of operations.

In addition, as part of their corporate social and environmental responsibility programs, an increasing number of OEMs are seeking to source products that do not contain minerals sourced from areas where proceeds from the sale of such minerals are likely to be used to fund armed conflicts, such as in the Democratic Republic of Congo. This could adversely affect the sourcing, availability and pricing of minerals used in the manufacture of semiconductor devices, including our products. Since our supply chain is complex, we are not currently able to definitively ascertain the origins of all of the minerals and metals used in our products. As a result, we may face difficulties in satisfying these customers’ demands, which may harm our sales and operating results.

The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future, which could harm our revenue and gross profit.

The semiconductor products we develop and sell are used for high volume applications. As a result, the prices of those products have often decreased rapidly. Gross profit on our products may be negatively affected by, among other things, pricing pressures from our customers. In the past, we have reduced the average selling prices of our products in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. In addition, some of our customer agreements provide for volume-based pricing and product pricing roadmaps, which can also reduce the average selling prices of our products over time. Our margins and financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing manufacturing costs, or developing new and higher value-added products on a timely basis.

A breach of our security systems may have a material adverse effect on our business.

Our security systems are designed to maintain the physical security of our facilities and protect our customers', suppliers' and employees' confidential information, as well as our own proprietary information. However, we are also dependent on a number of third-party cloud-based and other service providers of critical corporate infrastructure services relating to, among other things, human resources, electronic communication services and certain finance functions, and we are, out of necessity, dependent on the security systems of these providers.

Accidental or willful security breaches or other unauthorized access by third parties or our employees or contractors of our facilities, our information systems or the systems of our cloud-based or other service providers, or the existence of computer viruses or malware in our or their data or software could expose us to a risk of information loss and misappropriation of proprietary and confidential information, including information relating to our products or customers and the personal information of our employees. In addition, we have, from time to time, also been subject to unauthorized network intrusions and malware on our own IT networks.

Certain of our software products are intended to manage and secure IT infrastructures and environments, and as a result, we expect these products to be ongoing targets of cybersecurity attacks. Open source code or other third-party software used in these products could also be targeted. Additionally, we use third-party data centers, including for part of our SaaS business, which may also be subject to hacking incidents. Although we continually seek to improve our countermeasures to prevent such incidents, we may be unable to anticipate every scenario and it is possible that certain cyber threats or vulnerabilities will be undetected or unmitigated in time to prevent an attack on us and our customers. Cybersecurity attacks could require significant expenditures of our capital and diversion of our resources. Additionally, efforts by malicious cyber actors or others could cause interruptions, delays or cessation of our product licensing, or modification of our software, which could cause us to lose existing or potential customers. A successful cybersecurity attack involving our products and IT infrastructure could also negatively impact the market perception of their effectiveness.

Any theft or misuse of confidential, personally identifiable or proprietary information could disrupt our business and result in, among other things, unfavorable publicity, damage to our reputation, loss of our trade secrets and other competitive information, difficulty in marketing our products, allegations by our customers that we have not performed our contractual obligations, litigation by affected parties and possible financial obligations for liabilities and damages related to the theft or misuse of such information, as well as fines and other sanctions resulting from any related breaches of data privacy regulations (such as the General Data Protection Regulation), any of which could have a material adverse effect on our business, profitability and financial condition. Interruptions in our operations and services or disruptions to the functionality provided by our software, including the operation of our global civilian cyber intelligence threat network, could adversely impact our revenues or cause customers to cease doing business with us. In addition, our business would be harmed if any of the events of this nature caused our customers and potential customers to believe our services are unreliable. Our operations are dependent upon our ability to protect our technology infrastructure against damage from business continuity events that could have a significant disruptive effect on our operations. Since the techniques used to obtain unauthorized access to systems or to otherwise sabotage them, change frequently and are often not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures.

We are required to assess our internal control over financial reporting on an annual basis and any adverse findings from such assessment could result in a loss of investor confidence in our financial reports, significant expense to remediate any internal control deficiencies and ultimately have an adverse effect on our stock price.

We are required to assess the effectiveness of our internal control over financial reporting annually, as required by Section 404 of the Sarbanes-Oxley Act. Even though, as of November 3, 2019, we concluded that our internal control over financial reporting was effective, we need to maintain our processes and systems and adapt them as our business grows and changes, including to reflect our integration of the Symantec Business, as well as any future acquisitions we may undertake. This continuous process of maintaining and adapting our internal controls and complying with Section 404 is expensive, time consuming and requires significant management attention. We cannot be certain that our internal control measures will continue to provide adequate control over our financial processes and reporting and ensure compliance with Section 404. Furthermore, as we grow our business or acquire other businesses, our internal controls may become more complex and we may require significantly more resources to ensure they remain effective. Failure to implement required new or improved controls, or difficulties encountered in the implementation of such controls, either in our existing business or in businesses that we acquire, could harm our operating results or cause us to fail to meet our reporting obligations. If we or our independent registered public accounting firm identify material weaknesses in our internal controls, the disclosure of that fact, even if quickly remedied, may cause investors to lose confidence in our financial statements and the trading price of our common stock may decline.

Remediation of a material weakness could require us to incur significant expenses and if we fail to remedy any material weakness, our financial statements may be inaccurate, we may be required to restate our financial statements, our ability to report our financial results on a timely and accurate basis may be adversely affected, our access to the capital markets may be restricted, the trading price of our common stock may decline, and we may be subject to sanctions or investigation by regulatory authorities, including the SEC or The Nasdaq Global Select Market.

Current and future accounting pronouncements and other financial reporting standards, especially concerning revenue recognition, may negatively impact our financial results.

Our reported financial results are impacted by the accounting standards promulgated by the SEC and national accounting standards bodies and the methods, estimates and judgments that we use in applying those standards in our accounting policies. New standards, changes to existing standards and changes in their interpretation, have required and, in the future, may require us to change our accounting policies and procedures, or implement new or enhance existing systems. For example, ASU 2014-09, Revenue from Contracts with Customers ("Topic 606") became effective for us starting with fiscal year 2019. In connection with the CA Merger and our changes to CA's business strategy, including our adoption of a policy that allows customers to terminate their CA software contracts for convenience, we have been required to establish revenue recognition accounting policies and procedures under Topic 606 that we believe are appropriate for the business as we intend to conduct it. While we believe our policies and procedures are reasonable and appropriate, they are based on methods, estimates and judgments that are subject to risks, uncertainties, assumptions and changes that could adversely affect our reported financial position and financial results.

Fluctuations in foreign exchange rates could result in losses.

We operate global businesses and our consolidated financial results are reported in U.S. dollars. However, some of the revenue and expenses of our foreign subsidiaries are denominated in local currencies. Fluctuations in foreign exchange rates against the U.S. dollar could result in substantial changes in reported revenues and operating results due to the foreign exchange impact of translating these transactions into U.S. dollars.

In the normal course of business, we employ various hedging strategies to partially mitigate these risks, including the use of derivative instruments. These strategies may not be effective in protecting us against the effects of fluctuations in foreign exchange rates. As a result, fluctuations in foreign exchange rates could result in financial losses.

The enactment of legislation implementing changes in taxation of international business activities, the adoption of other corporate tax reform policies, or changes in tax legislation or policies could materially impact our financial position and results of operations.

Corporate tax reform, base-erosion efforts and tax transparency continue to be high priorities in many tax jurisdictions where we have business operations. As a result, policies regarding corporate income and other taxes in numerous jurisdictions are under heightened scrutiny and tax reform legislation is being proposed or enacted in a number of jurisdictions. For example, the U.S. Tax Cuts and Jobs Act (the "2017 Tax Reform Act") adopted broad U.S. corporate income tax reform, which among other things, reduced the U.S. corporate income tax rate, but imposed base-erosion prevention measures on earnings of non-U.S. subsidiaries of U.S. entities as well as the transition tax on mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations.

In addition, many countries are beginning to implement legislation and other guidance to align their international tax rules with the Organisation for Economic Co-operation and Development's Base Erosion and Profit Shifting recommendations and action plan that aim to standardize and modernize global corporate tax policy, including changes to cross-border tax, transfer pricing documentation rules, and nexus-based tax incentive practices. As a result of the heightened scrutiny of corporate taxation policies, prior decisions by tax authorities regarding treatments and positions of corporate income taxes could be subject to enforcement activities, and legislative investigation and inquiry, which could also result in changes in tax policies or prior tax rulings. Any such changes in policies or rulings may also result in the taxes we previously paid being subject to change.

Any substantial changes in domestic or international corporate tax policies, regulations or guidance, enforcement activities or legislative initiatives may materially adversely affect our business, the amount of taxes we are required to pay and our financial condition and results of operations generally.

If the tax incentives or tax holiday arrangements we have negotiated in Singapore and other jurisdictions change or cease to be in effect or applicable, in part or in whole, for any reason, or if our assumptions and interpretations regarding tax laws and incentives or holiday arrangements prove to be incorrect, the amount of corporate income taxes we have to pay could significantly increase.

Our operations are currently structured to benefit from the various tax incentives and tax holidays extended to us in various jurisdictions to encourage investment or employment. For example, our principal tax incentives from the Singapore Economic Development Board, an agency of the Government of Singapore, provides that any qualifying income we earn in Singapore is subject to tax incentives or reduced rates of Singapore income tax. Absent these tax incentives, the corporate income tax rate that would otherwise apply to our Singapore taxable income would be 17%. These Singapore tax incentives are expected to expire in November 2025, subject to potential extensions, which we may or may not be able to obtain, and any subsequent changes in incentive scope or legislative developments. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. The tax incentives and tax holiday that we have obtained are also subject to our compliance with various operating and other conditions and may, in some instances, be amended or terminated prior to their scheduled termination date by the relevant governmental authority. If we cannot, or elect not to, comply with the operating conditions included in any particular tax incentive or tax holiday, we could, in some instances, be required to refund previously realized material tax benefits, or if such tax incentive or tax holiday is terminated prior to its expiration absent a new incentive applying, we will lose the related tax benefits earlier than scheduled. Depending on the incentive at issue, we could also be required to modify our operational structure and tax strategy in order to keep the incentive, which may not be as beneficial to us as the present structure or tax strategy. Our tax incentives and tax holiday, before taking into consideration the effects of the 2017 Tax Reform Act and other indirect tax provisions, increased the benefit from income taxes by approximately $923 million in the aggregate and increased diluted net income per share by $2.20 for fiscal year 2019.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded, we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows.

Our provision for income taxes and overall cash tax costs are affected by a number of factors, including reorganizations or restructurings of our businesses or assets, jurisdictional revenue mix and changes in tax regulations or policy, and may be further impacted by corporate transactions, all of which could materially, adversely affect financial results.

We are a multinational company subject to tax in various tax jurisdictions. Significant judgment is required in determining our worldwide provision for income taxes. In the ordinary course of our business, there are many transactions where the ultimate tax determination is uncertain. Additionally, our calculations of income taxes payable currently and on a deferred basis are based on our interpretations of applicable tax laws in the jurisdictions in which we are required to file tax returns.

Our provision for income taxes is subject to volatility and could be adversely affected by numerous factors including:

- reorganization or restructuring of our businesses, tangible and intangible assets, outstanding indebtedness and corporate structure, such as in connection with acquiring businesses;
- jurisdictional mix of our income and assets, and the resulting tax effects of differing tax rates in different countries;
- changes in the allocation of income and expenses, including adjustments related to changes in our corporate structure, acquisitions or tax law;
- changes in transfer pricing rules or methods of applying these rules;
- changes in tax laws, including in the U.S., changes to the taxation of earnings of foreign subsidiaries, the deductibility of expenses attributable to income and foreign tax credit rules;
- tax effects of increases in non-deductible employee compensation;
- changes in tax accounting rules or principles and in the valuation of deferred tax assets and liabilities;

- outcomes of income tax audits; and
- modifications, expiration, lapses or termination of tax credits or incentives.

We have adopted transfer pricing policies between our affiliated entities. Our policies call for the provision of services, the sale of products, the advance of financing and grant of licenses from one affiliate to another at prices that we believe are negotiated on an arm’s length basis. Our taxable income in any jurisdiction is dependent upon acceptance of our operational practices and intercompany transfer pricing by local tax authorities as being on an arm’s length basis. Due to inconsistencies in application of the arm’s length standard among taxing authorities, as well as lack of comprehensive treaty-based protection, transfer pricing challenges by tax authorities could, if successful, result in adjustments for prior or future years. As a result of these adjustments, we could become subject to higher taxes and our earnings and results of operations would be adversely affected in any period in which such determination is made.

Although we believe our tax estimates are reasonable, there is no assurance that the final determination of our income tax liability will not be materially different than what is reflected in our income tax provisions and accruals. Significant judgment is required to determine the recognition and measurement of tax liabilities prescribed in the relevant accounting guidance for uncertainty in income taxes. The accounting guidance for uncertainty in income taxes applies to all income tax positions, which, if resolved unfavorably, could adversely impact our provision for income taxes and our payment obligation with respect to any such taxes.

In addition, we are subject to, and are under, tax audit in various jurisdictions, and such jurisdictions may assess additional income tax against us. Although we believe our tax positions are reasonable, the final determination of tax audits could be materially different from our income tax provisions and accruals. The ultimate result of an audit could have a material adverse effect on our results of operations and cash flows in the period or periods for which that determination is made.

The Internal Revenue Service may not agree that prior to the Redomiciliation Transaction Broadcom-Singapore should have been treated as a foreign corporation for U.S. federal income tax purposes.

Although Broadcom-Singapore is a Singapore entity, the Internal Revenue Service ("IRS") may assert that following our acquisition of BRCM, Broadcom-Singapore should have been treated as a U.S. corporation for U.S. federal income tax purposes pursuant to Section 7874 of the Internal Revenue Code of 1986, as amended (the "Code"). If the IRS were to determine that under Section 7874 of the Code, the former shareholders of BRCM held at least 60% of the vote or value of the ordinary shares of Broadcom-Singapore immediately after our acquisition of BRCM, such percentage referred to as the "Section 7874 Percentage", Broadcom-Singapore would be treated as a "surrogate foreign corporation" and several limitations could then apply to BRCM. For example, BRCM would be prohibited from using its net operating losses, foreign tax credits or other tax attributes to offset the income or gain recognized by reason of the transfer of property to a foreign related person during the 10-year period following our acquisition of BRCM or any income received or accrued during such period by reason of a license of any property by BRCM to a foreign related person. Moreover, in such case, Section 4985 of the Code and rules related thereto would impose an excise tax on the value of certain stock compensation held directly or indirectly by certain BRCM "disqualified individuals" (including former officers and directors of BRCM) at a rate equal to 15%, but only if a gain is otherwise recognized by BRCM former shareholders as a result of our acquisition of BRCM. If the IRS were to determine the Section 7874 Percentage was 80% or more, then Broadcom-Singapore would be treated as a U.S. corporation for U.S. federal income tax purposes.

While we believe the Section 7874 Percentage was significantly less than 60%, determining the Section 7874 Percentage is complex and is subject to factual and legal uncertainties. There can be no assurance that the IRS will agree with our position.

Risks Relating to Our Indebtedness

Our substantial indebtedness could adversely affect our financial health and our ability to raise additional capital to fund our operations or potential acquisitions, could limit our ability to react to changes in the economy or our industry, and exposes us to interest rate risk to the extent of our variable rate indebtedness and prevent us from fulfilling our obligations under our indebtedness.

As of November 3, 2019, our indebtedness under the 2017 Senior Notes, the 2019 Senior Notes and the Assumed CA Senior Notes was $17,550 million, $11,000 million and $1,850 million, respectively. In addition, $1,600 million was outstanding under the 2019 Term Loans. We also borrowed $12 billion of term loans to fund the acquisition of the Symantec Business. We expect to maintain significant levels of indebtedness going forward.

Our substantial indebtedness could have important consequences including:

- increasing our vulnerability to adverse general economic and industry conditions;
- exposing us to interest rate risk due to our variable rate term facilities, which we do not typically hedge against;
- limiting our flexibility in planning for, or reacting to, changes in the economy and the semiconductor industry;
- placing us at a competitive disadvantage compared to our competitors with less indebtedness;
- making it more difficult to borrow additional funds in the future to fund growth, acquisitions, working capital, capital expenditures and other purposes; and

- potentially requiring us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund our other business needs.

In addition, our variable rate indebtedness may use LIBOR as a benchmark for establishing the rate. LIBOR is the subject of recent national, international and other regulatory guidance and proposals for reform. These reforms and other pressures may cause LIBOR to disappear entirely or to perform differently than in the past. The consequences of these developments cannot be entirely predicted, but could include an increase in the cost of our variable rate indebtedness.

We receive debt ratings from the major credit rating agencies in the U.S. Factors that may impact our credit ratings include debt levels, planned asset purchases or sales and near-term and long-term production growth opportunities. Liquidity, asset quality, cost structure, reserve mix and commodity pricing levels could also be considered by the rating agencies. While we are focused on maintaining investment grade ratings from these agencies, we may be unable to do so. Any downgrade in our credit rating or the ratings of our indebtedness, or adverse conditions in the debt capital markets, could:

- adversely affect the trading price of, or market for, our debt securities;
- increase interest expense under our term facilities;
- increase the cost of, and adversely affect our ability to refinance, our existing debt; and
- adversely affect our ability to raise additional debt.

The instruments governing our indebtedness impose certain restrictions on our business.

The instruments governing our indebtedness contain certain covenants imposing restrictions on our business. These restrictions may affect our ability to operate our business, to plan for, or react to, changes in the market conditions or our capital needs and may limit our ability to take advantage of potential business opportunities as they arise. The restrictions placed on us include maintenance of an interest coverage ratio and limitations on our ability to incur certain secured debt, enter into certain sale and lease-back transactions and consolidate, merge, sell or otherwise dispose of all or substantially all of our assets. In addition, the instruments contain customary events of default upon the occurrence of which, after any applicable grace period, the indebtedness could be declared immediately due and payable. In such event, we may not have sufficient available cash to repay such debt at the time it becomes due, or be able to refinance such debt on acceptable terms or at all. Any of the foregoing could materially adversely affect our business, financial condition and results of operations.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on, and to refinance our debt, depends on our future performance, which is subject to economic, financial, competitive and other factors. Our business may not continue to generate cash flow from operations in the future sufficient to satisfy our obligations under our current indebtedness and any future indebtedness we may incur and to make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as reducing or delaying investments or capital expenditures, selling assets, refinancing or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our outstanding indebtedness or future indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms when needed, which could result in a default on our indebtedness.

Risks Relating to Owning Our Common Stock

At times, our stock price has been volatile and it may fluctuate substantially in the future, which could result in substantial losses for our investors as well as class action litigation against us and our management which could cause us to incur substantial costs and divert our management's attention and resources.

The trading price of our common stock has, at times, fluctuated significantly and could be subject to wide fluctuations in response to any of the risk factors listed in this "Risk Factors" section, and others, including:

- actual or anticipated fluctuations in our financial condition and operating results;
- issuance of new or updated research or other reports by securities analysts;
- fluctuations in the valuation and results of operations of our significant customers as well as companies perceived by investors to be comparable to us;
- announcements of proposed acquisitions by us or our competitors;
- announcements of, or expectations of, additional debt or equity financing transactions;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our common stock;

- changes in our dividend or stock repurchase policies or our ability to pay dividends;
- issuance, and subsequent sale, of common stock upon conversion of our 8.00% Mandatory Convertible Preferred Stock, Series A ("Mandatory Convertible Preferred Stock");
- hedging or arbitrage trading activity involving our Mandatory Convertible Preferred Stock or common stock;
- the initiation or conclusion of legal proceedings or government inquiries or investigations involving Broadcom;
- announcement or imposition of restrictive governmental actions, such as import/ export restrictions, duties and quotas, trade sanctions or customs duties and tariffs that may affect our business; and
- unsubstantiated news reports or other inaccurate publicity regarding us or our business.

These fluctuations are often unrelated or disproportionate to our operating performance. Broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or currency fluctuations, may negatively impact the market price of our common stock. You may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. We are also the subject of a number of lawsuits stemming from our acquisitions. Securities litigation against us, including the lawsuits related to such transactions, could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

The amount and frequency of our stock repurchases may fluctuate.

The amount, timing and execution of our stock repurchase program may fluctuate based on our priorities for the use of cash for other purposes. These purposes include operational spending, capital spending, acquisitions, repayment of debt and returning cash to our stockholders as dividend payments. Changes in cash flows, tax laws and our stock price could also impact our stock repurchase program.

A substantial amount of our stock is held by a small number of large investors and significant sales of our common stock in the public market by one or more of these holders could cause our stock price to fall.

As of September 30, 2019, we believe 11 of our 20 largest holders of common stock were active institutional investors who held approximately 33% of our outstanding shares of common stock in the aggregate, with Capital World Investors being our largest stockholder with approximately 11% of our outstanding shares of common stock. These investors may sell their shares at any time for a variety of reasons and such sales could depress the market price of our common stock. In addition, any such sales of our common stock by these entities could also impair our ability to raise capital through the sale of additional equity securities.

There can be no assurance that we will continue to declare cash dividends.

Our Board of Directors has adopted a dividend policy pursuant to which we currently pay a cash dividend on our common stock on a quarterly basis. The declaration and payment of any dividend is subject to the approval of our Board of Directors and our dividend may be discontinued or reduced at any time. In addition, any payment of dividends on our common stock is subject to and conditioned upon our payment of quarterly dividends on our Mandatory Convertible Preferred Stock. There can be no assurance that we will declare cash dividends in the future in any particular amounts, or at all.

Future dividends, if any, and their timing and amount, may be affected by, among other factors: management's views on potential future capital requirements for strategic transactions, including acquisitions; earnings levels; contractual restrictions cash position and overall financial condition; and changes to our business model. The payment of cash dividends is restricted by applicable law, contractual restrictions and our corporate structure. Because we are a holding company, our ability to pay cash dividends is also limited by restrictions or limitations on our ability to obtain sufficient funds through dividends from subsidiaries.

Our actual operating results may differ significantly from our guidance.

From time to time, we release guidance regarding our future performance that represents our management's estimates as of the date of release. This guidance, which consists of forward-looking statements, is prepared by our management and is qualified by, and subject to, the assumptions and the other information contained or referred to in the release. Our guidance is not prepared with a view toward compliance with published guidelines of the American Institute of Certified Public Accountants, and neither any independent registered public accounting firm nor any other independent expert or outside party compiles, examines or reviews the guidance and, accordingly, no such person expresses any opinion or any other form of assurance with respect thereto.

Guidance is based upon a number of assumptions and estimates that, while presented with numerical specificity, is inherently subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond our control and are based upon specific assumptions with respect to future business decisions, some of which will change. We generally state possible outcomes as high and low ranges which are intended to provide a sensitivity analysis as variables are changed but are not intended to represent that actual results could not fall outside of these ranges. The principal reason that we release this data is to provide a basis for our management to discuss our business outlook with analysts and investors. We do not accept any responsibility for any projections or reports published by any such persons.

Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions of the guidance furnished by us will not materialize or will vary significantly from actual results, particularly any guidance relating to the results of operations of acquired businesses or companies as our management will, necessarily, be less familiar with their business, procedures and operations. Accordingly, our guidance is only an estimate of what management believes is realizable as of the date of release. Actual results will vary from the guidance and the variations may be material. Investors should also recognize that the reliability of any forecasted financial data will diminish the farther in the future that the data are forecast. In light of the foregoing, investors are urged to put the guidance in context and not to place undue reliance on it.

Any failure to successfully implement our operating strategy or the occurrence of any of the events or circumstances set forth in this Annual Report on Form 10-K could result in the actual operating results being different than the guidance, and such differences may be adverse and material.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We are headquartered in San Jose, California. We conduct our administration, manufacturing, research and development, sales and marketing in both owned and leased facilities. We believe that our owned and leased facilities are adequate for our present operations. We do not identify or allocate assets by operating segment.

As of November 3, 2019, our owned and leased facilities in excess of 100,000 square feet consisted of:

(Square Feet)	United States	Other Countries	Total
Owned facilities [1]	2,590,766	1,067,895	3,658,661
Leased facilities [2]	1,646,583	740,152	2,386,735
Total facilities	4,237,349	1,808,047	6,045,396

[1] Includes 37,352 square feet of property owned in Singapore subject to a 30-year land lease with the state authority expiring in September 2029, subject to renewal at our option. Also includes 318,000 square feet and 153,000 square feet of property owned in Malaysia subject to a 60-year land lease with the state authority expiring in May 2051 and March 2077, respectively, subject to renewal at our option.

[2] Building leases expire on varying dates through March 2038 and generally include renewals at our option.

ITEM 3. LEGAL PROCEEDINGS

The information set forth under Note 13. "Commitments and Contingencies" included in Part II, Item 8. of this Annual Report on Form 10-K, is incorporated herein by reference. For an additional discussion of certain risks associated with legal proceedings, see "Risk Factors" above.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER SALE AND PURCHASES OF EQUITY SECURITIES

Market Information

Broadcom common stock is listed on The Nasdaq Global Select Market under the symbol "AVGO".

Holders

As of November 29, 2019, there were 715 holders of record of our common stock. A substantially greater number of stockholders are "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

Dividends and Distributions

On December 10, 2019, our Board of Directors declared a quarterly cash dividend of $3.25 per share, payable on December 31, 2019 to common stockholders of record on December 23, 2019. Broadcom paid aggregate cash dividends and distributions of $4,235 million and $2,998 million in fiscal years 2019 and 2018, respectively.

Issuer Purchases of Equity Securities

On December 5, 2018, our Board of Directors authorized an increase to our previously authorized $12 billion stock repurchase program to a total of $18 billion. This authorization ended on November 3, 2019.

The following table presents details of our various repurchases during the fiscal quarter ended November 3, 2019:

Period	Total Number of Shares Purchased (a)	Average Price per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan (a)	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plan
	(In millions, except per share data)			
August 5, 2019 — September 1, 2019	1	$ 276.60	1	$ 5,454
September 2, 2019 — September 29, 2019	1	$ 288.09	1	$ 5,307
September 30, 2019 — November 3, 2019	—	$ —	—	$ —
Total	2	$ 280.39	2	

Repurchases under our stock repurchase program were effected through a variety of methods, including open market or privately negotiated purchases in compliance with Rule 10b-18 promulgated under the Exchange Act, which included purchases under plans complying with Rule 10b5-1 of the Exchange Act. The timing and number of shares of common stock repurchased depended on a variety of factors, including price, general business and market conditions and alternative investment opportunities. We were not obligated to repurchase any specific number of shares of common stock.

(a) We also paid approximately $154 million in employee withholding taxes due upon the vesting of, and related to net settled equity awards. We withheld approximately 1 million shares of common stock from employees in connection with such net share settlement at an average price of $287.90 per share. These shares may be deemed to be “issuer purchases” of shares and are not included in this table.

Table of Contents

Stock Performance Graph

The following graph shows a comparison of cumulative total return for our common stock, the Standard & Poor’s 500 Stock Index (the “S&P 500 Index”), the NASDAQ 100 Index, and the Philadelphia Semiconductor Index (the “PHLX Semiconductor Index”) for the five fiscal years ended November 3, 2019. The total return graph and table assume that $100 was invested on October 31, 2014 (the last trading day of our fiscal year 2014) in each of Broadcom Inc. common stock, the S&P 500 Index, the NASDAQ 100 Index and the PHLX Semiconductor Index and assume all dividends are reinvested. Indexes are calculated on a month-end basis.

The PHLX Semiconductor Index was presented as a comparison in our 2018 Annual Report on Form 10-K stock performance graph. We have added the NASDAQ 100 Index as we consider it to be more representative than the PHLX Semiconductor Index. The NASDAQ 100 Index includes the largest domestic and international non-financial companies listed on The NASDAQ Stock Market based on market capitalization.

The comparisons in the graph below are based on historical data and are not indicative of, or intended to forecast, the possible future performance of our common stock.

Comparison of Five Year Cumulative Total Return

Among Broadcom Inc., the S&P 500 Index, the NASDAQ 100 Index and the PHLX Semiconductor Index

chart-2d5939c908705b0ab3f.jpg

	November 2, 2014	November 1, 2015	October 30, 2016	October 29, 2017	November 4, 2018	November 3, 2019
Broadcom Inc.	$ 100.00	$ 144.55	$ 201.30	$ 306.27	$ 274.86	$ 383.76
S&P 500 Index	$ 100.00	$ 105.20	$ 109.96	$ 136.22	$ 146.54	$ 168.44
NASDAQ 100 Index	$ 100.00	$ 113.14	$ 118.47	$ 154.97	$ 175.57	$ 208.03
PHLX Semiconductor Index	$ 100.00	$ 105.91	$ 133.45	$ 209.43	$ 209.14	$ 291.03

The graph and the table above shall not be deemed “filed” with the SEC for the purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing made by us with the SEC, regardless of any general incorporation language in such filing.

Securities Authorized for Issuance Under Equity Compensation Plans

The information required by this item regarding securities authorized for issuance under equity compensation plans is incorporated herein by reference to the definitive Proxy Statement for our 2020 annual meeting of stockholders to be filed with the SEC within 120 days after the end of fiscal year 2019.

ITEM 6. SELECTED FINANCIAL DATA

The following table sets forth the selected consolidated financial data for Broadcom and should be read in conjunction with our annual consolidated financial statements and related notes and information included under the headings "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this Annual Report on Form 10-K.

Summary of Five Year Selected Financial Data

	Fiscal Year Ended (1)				
	November 3, 2019	November 4, 2018	October 29, 2017	October 30, 2016	November 1, 2015
	(In millions, except per share data)				
Statement of Operations Data: (2)					
Total net revenue (3)	$22,597	$20,848	$17,636	$13,240	$ 6,824
Gross margin (4) (5)	$12,483	$10,733	$ 8,509	$ 5,940	$ 3,550
Operating expenses (4) (5) (6)	$ 9,039	$ 5,598	$ 6,138	$ 6,356	$ 1,935
Income (loss) from continuing operations before income taxes	$ 2,226	$ 4,545	$ 1,825	$(1,107)	$ 1,467
Provision for (benefit from) income taxes (7)	$ (510)	$(8,084)	$ 35	$ 642	$ 76
Income (loss) from continuing operations	$ 2,736	$12,629	$ 1,790	$(1,749)	$ 1,391
Net income (loss)	$ 2,724	$12,610	$ 1,784	$(1,861)	$ 1,364
Net income (loss) attributable to common stock	$ 2,695	$12,259	$ 1,692	$(1,739)	$ 1,364
Diluted income (loss) per share**:**					
Income (loss) per share from continuing operations	$ 6.46	$ 28.48	$ 4.03	$ (4.57)	$ 4.95
Loss per share from discontinued operations	(0.03)	(0.04)	(0.01)	(0.29)	(0.10)
Net income (loss) per share	$ 6.43	$ 28.44	$ 4.02	$ (4.86)	$ 4.85
Cash dividends declared and paid per share	$ 10.60	$ 7.00	$ 4.08	$ 1.94	$ 1.55

	November 3, 2019	November 4, 2018	October 29, 2017	October 30, 2016	November 1, 2015
	(In millions)				
Balance Sheet Data: (2)					
Cash and cash equivalents	$ 5,055	$ 4,292	$11,204	$ 3,097	$ 1,822
Total assets	$67,493	$50,124	$54,418	$49,966	$10,515
Debt and capital lease obligations	$32,798	$17,493	$17,569	$13,642	$ 3,872
Total equity	$24,970	$26,657	$23,186	$21,876	$ 4,714

---

(1)

Our fiscal year ends on the Sunday closest to October 31 in a 52-week year and on the first Sunday in November in a 53-week year. Our fiscal year ended November 4, 2018 was a 53-week fiscal year. All other fiscal years presented included 52 weeks.

(2) On November 5, 2018, we acquired CA for total consideration of approximately $18.8 billion. On November 17, 2017, we acquired Brocade for total consideration of approximately $6.0 billion. On February 1, 2016, we acquired BRCM for total consideration of approximately $35.7 billion. On May 5, 2015, we acquired Emulex Corporation for total consideration of approximately $587 million. Our financial statements included the results of operations of the acquired companies and estimated fair value of assets acquired and liabilities assumed commencing as of their respective acquisition dates.

(3) During fiscal year 2019, we adopted Topic 606. Periods prior to fiscal year 2019 are presented in accordance with Accounting Standards Codification 605, Revenue Recognition. Refer to Note 3. "Revenue from Contracts with Customers" included in Part II, Item 8. for additional information on our adoption of Topic 606.

(4) We incurred acquisition-related costs and restructuring charges which were presented as part of both cost of products sold and operating expenses. Restructuring charges primarily reflect actions taken to implement planned cost reduction and restructuring activities in connection with each acquisition.

(5) During fiscal year 2019, we adopted Accounting Standards Update 2017-07 *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost* using a permitted practical expedient that uses the amounts disclosed in the pension and other post-retirement benefit plans note for the prior comparative periods as the estimation basis for applying the retrospective presentation requirements. As a result of the adoption of this standard, gross margin and operating expenses have been restated for prior fiscal years presented, as applicable.

(6) In connection with our acquisition of CA in fiscal year 2019, amortization of acquisition-related intangible assets increased $1,357 million contributing to 39% of the overall increase in operating expenses for fiscal year 2019. In connection with our acquisition of BRCM in fiscal year 2016, amortization of acquisition-related intangible assets increased $1,624 million contributing to over 30% of the overall increase in operating expenses for fiscal year 2016.

(7) Our benefit from income taxes for fiscal year 2019 was primarily due to the recognition of gross uncertain tax benefits as a result of audit settlements in various jurisdictions and excess tax benefits from stock-based awards that vested or were exercised during the year. Our benefit from income taxes for fiscal year 2018 was primarily a result of the enactment of the 2017 Tax Reform Act and the Redomiciliation Transaction. For fiscal years 2017, 2016, and 2015, our provision for income taxes fluctuated mainly due to changes in the jurisdictional mix of income.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with "Selected Financial Data" and our consolidated financial statements and notes thereto which appear elsewhere in this Annual Report on Form 10-K. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under the caption "Risk Factors" or in other parts of this Annual Report on Form 10-K.

Overview

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Our infrastructure software solutions enable customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms. Through our fiscal year ended November 3, 2019 ("fiscal year 2019"), we had three reportable segments: semiconductor solutions, infrastructure software and intellectual property ("IP") licensing.

Our strategy is to combine best-of-breed technology leadership in semiconductor and infrastructure software solutions, with unmatched scale, on a common sales and administrative platform to deliver a comprehensive suite of infrastructure technology products to the world's leading business and government customers. We seek to achieve this through responsibly financed acquisitions of category-leading businesses and technologies, as well as investing extensively in research and development, to ensure our products retain their technology leadership. This strategy results in a robust business model designed to drive diversified and sustainable operating and financial results.

The demand for our products has been affected in the past, and is likely to continue to be affected in the future, by various factors, including the following:

- gain or loss of significant customers;
- general economic and market conditions in the industries and markets in which we compete;
- our distributors' product inventory and end customer demand;
- the rate at which our present and future customers and end-users adopt our products and technologies in our target markets, and the rate at which our customers' products that include our technology are accepted in their markets;
- the shift to cloud-based IT solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers; and
- the timing, rescheduling or cancellation of expected customer orders.

Uncertainty in global economic conditions poses significant risks to our business. For example, customers may defer purchases in response to tighter credit and negative financial news, which would in turn adversely affect product demand and our results of operations.

Our fiscal year 2019 and our fiscal year ended October 29, 2017 ("fiscal year 2017") were 52-week fiscal years compared to our fiscal year ended November 4, 2018 ("fiscal year 2018"), which was a 53-week fiscal year. The additional week in the first quarter of fiscal year 2018 resulted in higher net revenue, gross margin dollars, research and development expense, and selling general and administrative expense for fiscal year 2018, compared to fiscal years 2019 and 2017.

Fiscal Year Highlights

Highlights during fiscal year 2019 include the following:

- On September 30, 2019, we completed an offering of approximately 4 million shares of 8.00% Mandatory Convertible Preferred Stock, Series A, $0.001 par value per share (the "Mandatory Convertible Preferred Stock"), which generated net proceeds of $3,679 million. We used the net proceeds, together, with cash on hand, to repay $4.8 billion of our long-term debt.

- We generated $9,697 million of cash from operations.

Table of Contents

- We paid $5,435 million to repurchase shares of our common stock under our stock repurchase program, $4,235 million for cash dividends and distributions and $972 million in employee withholding taxes related to net share settled equity awards.

- On November 5, 2018, we completed the acquisition of CA, Inc. ("CA") for aggregate consideration of approximately $18.8 billion.

Recent Developments

Purchase of Symantec Corporation's Enterprise Security Business

On November 4, 2019, we completed the purchase and assumption of certain assets and certain liabilities, respectively, of Symantec Corporation's Enterprise Security business ("Symantec Business") for approximately $10.7 billion in cash (the "Symantec Asset Purchase").

In connection with the Symantec Asset Purchase, we entered into a credit agreement with certain financial institutions to provide (i) up to $12 billion in term loans to fund the Symantec Asset Purchase and related working capital needs and (ii) $3.5 billion in term loans to refinance certain existing senior notes maturing in the first quarter of our fiscal year ending November 1, 2020 ("fiscal year 2020").

The discussions below relate to our business, reporting segments and financial results for fiscal year 2019 and prior periods and do not include any impact from or information relating to the Symantec Asset Purchase.

Acquisitions and Divestitures

The discussion and analysis in this section and the accompanying consolidated financial statements include the results of operations of acquired companies commencing on their respective acquisition dates.

Acquisition of CA, Inc.

On November 5, 2018 (the "CA Acquisition Date"), we acquired CA for approximately $18.8 billion in aggregate cash purchase consideration and assumed $2.25 billion of outstanding unsecured bonds (the "CA Merger"). We financed the CA Merger with $18 billion of term loans borrowed on the CA Acquisition Date, as well as cash on hand of the combined companies. See Note 9. "Borrowings" included in Part II, Item 8. of this Annual Report on Form 10-K for further detail. We also assumed all eligible unvested CA equity awards in the transaction. On December 31, 2018, we sold Veracode, Inc. ("Veracode"), a subsidiary of CA and provider of application security testing solutions, to Thoma Bravo, LLC for cash consideration of $950 million, before working capital adjustments.

Acquisition of Brocade Communications Systems, Inc.

On November 17, 2017, we acquired Brocade Communications Systems, Inc. ("Brocade") for approximately $6.0 billion in cash, including retirement of their term loan debt (the "Brocade Merger"), which we financed using the net proceeds from the issuance of our senior unsecured notes, issued in October 2017, as well as cash on hand. We also assumed all eligible unvested Brocade equity awards in the transaction. On December 1, 2017, we sold certain Brocade businesses for an aggregate of $800 million in cash.

Net Revenue

A majority of our net revenue is derived from sales of a broad range of semiconductor devices that are incorporated into electronic products, as well as from modules, switches and subsystems. Net revenue is also generated from the sale of software solutions that enable our customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms. Our three reportable segments in fiscal year 2019 were: semiconductor solutions, infrastructure software and IP licensing.

Our overall net revenue, as well as the percentage of total net revenue generated by sales in our semiconductor solutions and infrastructure software segments, has varied from quarter to quarter, due largely to fluctuations in end-market demand, including the effects of seasonality, which are discussed in detail in Part I, Item 1. *Business* under "Seasonality" of this Annual Report on Form 10-K.

Original equipment manufacturers ("OEMs"), or their contract manufacturers, and distributors typically account for the substantial majority of our semiconductor sales. To serve customers around the world, we have strategically developed relationships with large global electronic component distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges. We also sell our products to a wide variety of OEMs or their contract manufacturers. We have established strong relationships with leading OEM customers across multiple target markets. Our direct sales force focuses on supporting our large OEM customers and has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer's organization. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers. Many of our major customer relationships have been in place for many years and are often the result of years of collaborative product development. This has enabled us to build our extensive IP portfolio and develop critical expertise regarding our customers’ requirements, including substantial system-level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. We recognize revenue upon delivery of product to the distributors, which can cause our quarterly net revenue to fluctuate significantly. Such revenue is reduced for estimated returns and distributor allowances.

Our traditional software customers generally consist of large enterprises that have computing environments from multiple vendors and are highly complex. We believe our enterprise-wide license model will continue to offer our customers reduced complexity, more flexibility and an easier renewal process that will help drive revenue growth.

Costs and Expenses

Cost of products sold. Cost of products sold consists primarily of the costs for semiconductor wafers and other materials as well as the costs of assembling and testing those products and materials. Such costs include personnel and overhead related to our manufacturing operations, which include stock-based compensation expense; related occupancy; computer services; equipment costs; manufacturing quality; order fulfillment; warranty adjustments; inventory adjustments, including write-downs for inventory obsolescence; and acquisition costs, which include direct transaction costs and integration-related costs.

Although we outsource a significant portion of our manufacturing activities, we do have some proprietary semiconductor fabrication facilities. If we are unable to utilize our owned fabrication facilities at a desired level, the fixed costs associated with these facilities will not be fully absorbed, resulting in higher average unit costs and lower gross margins.

Cost of subscriptions and services. Cost of subscriptions and services consists of personnel, project costs associated with professional services or support of our subscriptions and services revenue, and allocated facilities costs and other corporate expenses. Personnel costs include stock-based compensation expense.

Total cost of revenue also includes the purchase accounting effect on inventory, amortization of acquisition-related intangible assets and restructuring charges.

Research and development. Research and development expense consists primarily of personnel costs for our engineers engaged in the design and development of our products and technologies, including stock-based compensation expense. These expenses also include project material costs, third-party fees paid to consultants, prototype development expense, allocated facilities costs and other corporate expenses and computer services costs related to supporting computer tools used in the engineering and design process.

Selling, general and administrative. Selling expense consists primarily of compensation and associated costs for sales and marketing personnel, including stock-based compensation expense, sales commissions paid to our independent sales representatives, advertising costs, trade shows, corporate marketing, promotion, travel related to our sales and marketing operations, related occupancy and equipment costs, and other marketing costs. General and administrative expense consists primarily of compensation and associated costs for executive management, finance, human resources and other administrative personnel, including stock-based compensation expense, outside professional fees, allocated facilities costs, acquisition-related costs and other corporate expenses.

Amortization of acquisition-related intangible assets. In connection with our acquisitions, we recognize intangible assets that are being amortized over their estimated useful lives of 1 year to 25 years. We also recognize goodwill, which is not amortized, and in-process research and development (“IPR&D”), which is initially capitalized as an indefinite-lived intangible asset, in connection with acquisitions. Upon completion of each underlying project, IPR&D assets are reclassified as an amortizable purchased intangible asset and amortized over their estimated useful lives.

Restructuring, impairment and disposal charges. Restructuring, impairment and disposal charges consist primarily of compensation costs associated with employee exit programs, alignment of our global manufacturing operations, rationalizing product development program costs, IPR&D impairment, fixed asset impairment, facility and lease abandonments, and other exit costs, including curtailment of service or supply agreements.

Interest expense. Interest expense includes coupon interest, commitment fees, accretion of original issue discount, and amortization of debt premiums and debt issuance costs, and expenses related to debt modification.

Other income, net. Other income, net includes interest income, gains (losses) on investments and on foreign currency remeasurement, and other miscellaneous items.

Provision for (benefit from) income taxes. The U.S. Tax Cuts and Jobs Act (“2017 Tax Reform Act”) made significant changes to the U.S. Internal Revenue Code, including (1) a decrease in the U.S. corporate tax rate from 35% to 21% effective for tax years beginning after December 31, 2017, (2) the accrual of U.S. income tax on foreign earnings when earned, allowing certain foreign dividends to then be tax-exempt, rather than deferring such income tax payments until the foreign earnings are repatriated into the U.S., and (3) the transition tax on the mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations (the "Transition Tax"). Following the enactment of the 2017 Tax Reform Act, the Securities and Exchange Commission ("SEC"), issued guidance for situations when there is insufficient information to complete the accounting for certain income tax effects of the 2017 Tax Reform Act. Based on our interpretation of the 2017 Tax Reform Act and the SEC's guidance, we recognized an income tax benefit of $7,278 million during fiscal year 2018. During fiscal year 2019 we recorded an income tax provision of $113 million from a change in estimate of our fiscal year 2018 benefit as a result of proposed U.S. Treasury regulations issued in fiscal year 2019 related to the 2017 Tax Reform Act. We also recognized an income tax benefit of $1,162 million in fiscal year 2018 primarily as a result of our redomiciliation to the United States in April 2018 (the "Redomiciliation Transaction").

We have structured our operations to maximize the benefit from tax incentives extended to us in various jurisdictions to encourage investment or employment. Our tax incentives from the Singapore Economic Development Board, an agency of the Government of Singapore, provide that any qualifying income earned in Singapore is subject to tax incentives or reduced rates of Singapore income tax. Subject to our compliance with the conditions specified in these incentives and legislative developments, these Singapore tax incentives are presently expected to expire in November 2025, subject in certain cases to potential extensions, which we may or may not be able to obtain. Absent these tax incentives, the corporate income tax rate in Singapore that would otherwise apply to us would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028.

The tax incentives and tax holiday that we have obtained are also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with the operating conditions included in any particular tax incentive, we will lose the related tax benefits and we could be required to refund previously realized material tax benefits. Depending on the incentive at issue, we could also be required to modify our operational structure and tax strategy, which may not be as beneficial to us as the benefits provided under the present tax concession arrangements. Before taking into consideration the effects of the 2017 Tax Reform Act and other indirect tax impact, the effect of these tax incentives and tax holiday was to increase the benefit from income taxes by approximately $923 million and $590 million for fiscal years 2019 and 2018, respectively. For fiscal year 2017, the effect of these tax incentives and tax holiday was to reduce the overall provision for income taxes by approximately $237 million.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows. In addition, taxable income in any jurisdiction is dependent upon acceptance of our operational practices and intercompany transfer pricing by local tax authorities as being on an arm's length basis. Due to inconsistencies in application of the arm's length standard among taxing authorities, as well as lack of adequate treaty-based protection, transfer pricing challenges by tax authorities could, if successful, substantially increase our income tax expense.

Critical Accounting Estimates

The preparation of financial statements in accordance with generally accepted accounting principles in the United States ("GAAP") requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. We base our estimates and assumptions on current facts, historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the accrual of costs and expenses that are not readily apparent from other sources. Our actual financial results may differ materially and adversely from our estimates. Our critical accounting policies are those that affect our historical financial statements materially and involve difficult, subjective or complex judgments by management. Those policies include revenue recognition, business combinations, valuation of long-lived assets, intangible assets and goodwill, inventory valuation, income taxes, retirement and post-retirement benefit plan assumptions, stock-based compensation and employee bonus programs. See Note 2. "Summary of Significant Accounting Policies" included in Part II, Item 8. of this Annual Report on Form 10-K for further information on our critical accounting policies and estimates.

Revenue recognition. We account for a contract with a customer when both parties have approved the contract and are committed to perform their respective obligations, each party's rights can be identified, payment terms can be identified, the contract has commercial substance, and it is probable we will collect substantially all of the consideration we are entitled to. Revenue is recognized when, or as, performance obligations are satisfied by transferring control of a promised product or service to a customer. Our products and services can be broadly categorized as sales of products and subscriptions and services.

We recognize products revenue from sales to direct customers and distributors when control transfers to the customer. An allowance for distributor credits covering price adjustments is made based on our estimate of historical experience rates as well as considering economic conditions and contractual terms. To date, actual distributor claims activity has been materially consistent with the provisions we have made based on our historical estimates. However, because of the inherent nature of estimates, there is always a risk that there could be significant differences between actual amounts and our estimates. Different judgments or estimates could result in variances that might be significant to reported operating results. We also record reductions of revenue for rebates in the same period that the related revenue is recorded. We accrue 100% of potential rebates at the time of sale. We reverse the accrual of unclaimed rebate amounts as specific rebate programs contractually end and when we believe unclaimed rebates are no longer subject to payment and will not be paid. Thus, the reversal of unclaimed rebates may have a positive impact on our net revenue and net income in subsequent periods.

Our contracts may contain more than one of our products and services, each of which is separately accounted for as a distinct performance obligation. When available, we use directly observable transactions to determine the standalone selling prices for performance obligations. Our estimates of standalone selling price for each performance obligation require judgment that considers multiple factors, including, but not limited to, historical discounting trends for products and services and pricing practices through different sales channels, gross margin objectives, internal costs, competitor pricing strategies, technology lifecycles and market conditions.

We also estimate the standalone selling price of our material rights. Our estimate of the value of the customer's option to purchase or receive additional products or services at a discounted price includes estimating the incremental discount the customer would obtain when exercising the option and the likelihood that the option would be exercised.

Certain contracts contain a right of return that allows the customer to cancel all or a portion of the product or service and receive a credit. We estimate returns based on historical returns data which is constrained to an amount for which a material revenue reversal is not probable. We do not recognize revenue for products or services that are expected to be returned.

Business combinations. Accounting for business combinations requires management to make significant estimates and assumptions, especially at the acquisition date, for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain of the intangible assets we have acquired include, but are not limited to, future expected cash flows from product sales, customer contracts and acquired technologies, expected costs to develop IPR&D into commercially viable products, estimated cash flows from the projects when completed, and discount rates. The discount rates used to discount expected future cash flows to present value are typically derived from a weighted-average cost of capital analysis and adjusted to reflect inherent risks. Unanticipated events and circumstances may occur that could affect either the accuracy or validity of such assumptions, estimates or actual results.

Valuation of goodwill and long-lived assets. We perform an annual impairment review of our goodwill during the fourth fiscal quarter of each year, and more frequently if we believe indicators of impairment exist. The process of evaluating the potential impairment of goodwill is highly subjective and requires significant judgment. To review for impairment, we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more-likely-than-not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. These factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more-likely-than-not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit’s net book value.

Determining the fair value of a reporting unit involves the use of significant estimates and assumptions. Our goodwill impairment test uses both the income approach and the market approach to estimate a reporting unit's fair value. The income approach is based on the discounted cash flow method that uses the reporting unit estimates for forecasted future financial performance including revenues, operating expenses, and taxes, as well as working capital and capital asset requirements. These estimates are developed as part of our long-term planning process based on assumed market segment growth rates and our assumed market segment share, estimated costs based on historical data and various internal estimates. Projected cash flows are then discounted to a present value employing a discount rate that properly accounts for the estimated market weighted-average cost of capital, as well as any risk unique to the subject cash flows. The market approach is based on weighting financial multiples of comparable companies and applies a control premium. A reporting unit's carrying value represents the assignment of various assets and liabilities, excluding certain corporate assets and liabilities, such as cash and debt.

We assess the impairment of long-lived assets including purchased IPR&D, property, plant and equipment, and intangible assets, whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, or (iii) significant negative industry or economic trends. The process of evaluating the potential impairment of long-lived assets under the accounting guidance on property, plant and equipment and other intangible assets is also highly subjective and requires significant judgment. In order to estimate the fair value of long-lived assets, we typically make various assumptions about the future prospects of our business or the part of our business that the long-lived asset relates to. We also consider market factors specific to the business and estimate future cash flows to be generated by the business, which requires significant judgment as it is based on assumptions about market demand for our products over a number of future years. Based on these assumptions and estimates, we determine whether we need to take an impairment charge to reduce the value of the long-lived asset stated on our consolidated balance sheet to reflect its estimated fair value. Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors, such as the real estate market, industry and economic trends, and internal factors, such as changes in our business strategy and our internal forecasts. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, changes in assumptions and estimates could materially impact our reported financial results.

Inventory valuation. We regularly review inventory quantities on hand and record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. Demand for our products can fluctuate significantly from period to period. A significant decrease in demand could result in an increase in the amount of excess inventory quantities on hand. In addition, our industry is characterized by rapid technological change, frequent new product development and rapid product obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Additionally, our estimates of future product demand may prove to be inaccurate, which may cause us to understate or overstate both the provision required for excess and obsolete inventory and cost of products sold. Therefore, although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our results of operations.

Income taxes. Significant management judgment is required in developing our provision for income taxes, including the determination of deferred tax assets and liabilities and any valuation allowances that might be required against the deferred tax assets. We have considered projected future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for valuation allowances. If we determine that a valuation allowance is required, such adjustment to the deferred tax assets would increase our tax expense in the period in which such determination is made. Conversely, if we determine that a valuation allowance exceeds our requirement, such adjustment to the deferred tax assets would decrease tax expense in the period in which such determination is made. In evaluating the exposure associated with various tax filing positions, we accrue an income tax liability when such positions do not meet the more-likely-than-not threshold for recognition.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax law and regulations in a multitude of jurisdictions. We recognize potential liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on our estimate of whether, and the extent to which, additional taxes, interest and penalties will be due. If our estimate of income tax liabilities proves to be less than the actual amount ultimately assessed, a further charge to tax expense would be required. If the payment of these amounts ultimately proves to be unnecessary, the reversal of the accrued liabilities would result in tax benefits being recognized in the period when we determine the liabilities no longer exist.

Retirement and post-retirement benefit plan assumptions. Retirement and post-retirement benefit plan costs represent obligations that will ultimately be settled sometime in the future and therefore, are subject to estimation. Pension accounting is intended to reflect the recognition of future retirement and post-retirement benefit plan costs over the employees' average expected future service to us, based on the terms of the plans and investment and funding decisions. To estimate the impact of these future payments and our decisions concerning funding of these obligations, we are required to make assumptions using actuarial concepts within the framework of GAAP. One assumption is the discount rate used to calculate the estimated costs. Other assumptions include the expected long-term return on plan assets, expected future salary increases, the health care cost trend rate, expected future increases to benefit payments, expected retirement dates, employee turnover, retiree mortality rates, and portfolio composition. We evaluate these assumptions at least annually.

The discount rate is used to determine the present value of future benefit payments at the relevant measurement dates — November 3, 2019 and November 4, 2018, for both U.S. and non-U.S. plans, in fiscal years 2019 and 2018, respectively. The U.S. discount rates are based on the results of matching expected plan benefit payments with cash flows from a hypothetical yield curve constructed with high-quality corporate bond yields. The discount rate for non-U.S. plans was based either on published rates for government bonds or use of a hypothetical yield curve constructed with high-quality corporate bond yields, depending on the availability of sufficient quantities of quality corporate bonds. Lower discount rates increase present values of the pension liabilities and subsequent year pension expense; higher discount rates decrease present values of the pension liabilities and subsequent year pension expense.

The U. S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy.

Actuarial assumptions are based on our best estimates and judgment. Material changes may occur in retirement benefit costs in the future if these assumptions differ from actual events or experience. We performed a sensitivity analysis on the discount rate, which is the key assumption in calculating U.S. pension and post-retirement benefit obligations as of November 3, 2019. Each change of 25 basis points in the discount rate assumption would have had an estimated $40 million impact on the benefit obligations as of November 3, 2019. Each change of 25 basis points in the discount rate assumption or expected rate of return assumption would not have a material impact on annual net retirement benefit costs for fiscal year 2020.

Stock-based compensation expense. Stock-based compensation expense consists of expense for RSUs and stock options granted to employees and non-employees or assumed from acquisitions as well as expense associated with Broadcom employee stock purchase plan (“ESPP”). We recognize compensation expense for time-based stock options and ESPP rights based on the estimated grant-date fair value method required under the authoritative guidance using the Black-Scholes valuation model.

Certain equity awards include both time-based and market-based conditions and are accounted for as market-based awards. The fair value of these market-based awards is estimated on the date of grant using a Monte Carlo simulation model.

Employee Bonus Programs. Our employee bonus programs, which are overseen by our Compensation Committee, or our Board, in the case of our Chief Executive Officer, provide for variable compensation based on the attainment of overall corporate annual targets and functional performance metrics. In the first fiscal quarter of the year, if management determines that it is probable that the targets and metrics will be achieved and the amounts can be reasonably estimated, a variable, proportional compensation accrual is recognized based on an assumed 100% achievement of the targets and metrics. The bonus payout levels can be greater if attainment of metrics and targets is greater than 100% and a portion of the payouts may not occur if a minimum floor of performance is not achieved. In subsequent quarters, we monitor and accrue for variable compensation expense based on our actual progress toward the achievement of the annual targets and metrics. The actual achievement of target metrics at the end of the fiscal year, which is subject to approval by our Compensation Committee, may result in the actual variable compensation amounts being significantly higher or lower than the relevant estimated amounts accrued in earlier quarters, which would result in a corresponding adjustment in the fourth fiscal quarter.

Fiscal Year Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal years 2019 and 2017 consisted of 52 weeks. Fiscal year 2018 consisted of 53 weeks.

The financial statements included in Part II, Item 8. of this Annual Report on Form 10-K are presented in accordance with GAAP and expressed in U.S. dollars.

Results of Operations

Fiscal Year 2019 Compared to Fiscal Year 2018

The following table sets forth our results of operations for the periods presented:

	Fiscal Year Ended			
	November 3, 2019	November 4, 2018	November 3, 2019	November 4, 2018
	(In millions)		(As a percentage of net revenue)	
Statements of Operations Data:				
Net revenue:				
Products	$ 18,117	$ 19,754	80 %	95 %
Subscriptions and services	4,480	1,094	20	5
Total net revenue	22,597	20,848	100	100
Cost of revenue:				
Cost of products sold	6,208	6,924	28	33
Cost of subscriptions and services	515	97	2	1
Purchase accounting effect on inventory	—	70	—	—
Amortization of acquisition-related intangible assets	3,314	3,004	15	14
Restructuring charges	77	20	—	—
Total cost of revenue	10,114	10,115	45	48
Gross margin	12,483	10,733	55	52
Research and development	4,696	3,768	21	18
Selling, general and administrative	1,709	1,056	8	5
Amortization of acquisition-related intangible assets	1,898	541	8	3
Restructuring, impairment and disposal charges	736	219	3	1
Litigation settlements	—	14	—	—
Total operating expenses	9,039	5,598	40	27
Operating income	$ 3,444	$ 5,135	15 %	25 %

Net Revenue

Historically, a relatively small number of customers has accounted for a significant portion of our net revenue. Sales of products to distributors accounted for 46% and 34% of our net revenue for fiscal years 2019 and 2018, respectively. Direct sales to WT Microelectronics, a distributor, accounted for 17% of our net revenue for fiscal year 2019. No direct customer represented more than 10% of our net revenue during fiscal year 2018. We believe our aggregate sales to our top five end customers through all channels accounted for more than 30% and more than 40% of our net revenue for fiscal years 2019 and 2018, respectively. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 20% of our net revenue for fiscal year 2019 and approximately 25% for fiscal year 2018. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition. Additionally, if export restrictions on one of our larger customers continue, revenue in future periods may continue to be adversely impacted.

From time to time, some of our key semiconductor customers place large orders or delay orders, causing our quarterly net revenue to fluctuate significantly. This is particularly true for our wireless products as fluctuations may be magnified by the launches of, and seasonal variations in sales of mobile handsets.

Although we recognize revenue for the majority of our products when title and control transfer in Penang, Malaysia, we disclose net revenue by country based on the geographic shipment or delivery location specified by distributors, OEMs, contract manufacturers, channel partners, or software customers. In fiscal year 2019, approximately 35% of our net revenue came from shipments or deliveries to China (including Hong Kong), compared to approximately 50% for both fiscal years 2018 and 2017. However, the end customers for either our products or for the end products into which our products are incorporated, are frequently located in countries other than China (including Hong Kong). As a result, we believe that a substantially smaller percentage of our net revenue is ultimately dependent on sales of either our product or our customers' product incorporating our product, to end customers located in China (including Hong Kong).

[Table of Contents](#)

The following tables set forth net revenue by segment for the periods presented:

Net Revenue by Segment	Fiscal Year Ended November 3, 2019	Fiscal Year Ended November 4, 2018	$ Change	% Change
	(In millions, except for percentages)			
Semiconductor solutions	$17,368	$18,934	$ (1,566)	(8)%
Infrastructure software	5,156	1,780	3,376	190 %
IP licensing	73	134	(61)	(46)%
Total net revenue	$22,597	$20,848	$ 1,749	8 %

Net Revenue by Segment	Fiscal Year Ended November 3, 2019	Fiscal Year Ended November 4, 2018
	(As a percentage of net revenue)	
Semiconductor solutions	77 %	91 %
Infrastructure software	23	8
IP licensing	—	1
Total net revenue	100 %	100 %

Our total net revenue increased primarily due to the acquisition of CA in fiscal year 2019. Net revenue from our semiconductor solutions segment decreased due to lower demand for our wireless content in mobile handsets, as well as lower demand for our broadband, optocoupler, set-top box and server storage connectivity. Fiscal year 2018 semiconductor solutions revenue benefited from a later than typical new mobile handset ramp with a major customer in the first quarter, which resulted in higher shipments in that quarter, as well as an extra week in the fiscal year as compared to fiscal year 2019. Net revenue from our infrastructure software segment increased primarily due to contributions from our CA mainframe and enterprise software products.

Gross Margin

Gross margin was $12,483 million for fiscal year 2019 compared to $10,733 million for fiscal year 2018. Gross margin as a percentage of net revenue increased to 55% in fiscal year 2019 from 52% for fiscal year 2018. These increases were primarily due to contributions from our CA mainframe and enterprise software products and favorable product mix within our semiconductor solutions segment. These increases were partially offset by higher amortization of acquisition-related intangible assets and restructuring charges as a result of the CA Merger and higher stock-based compensation expense. We expect to incur additional amortization of acquisition-related intangible assets in future periods as a result of our acquisition of the Symantec Business and any further acquisitions we may make.

Research and Development Expense

Research and development expense increased $928 million, or 25%, in fiscal year 2019. Research and development expense as a percentage of net revenue was 21% and 18% for fiscal years 2019 and 2018, respectively. The increase was primarily due to the acquisition of CA and higher stock-based compensation expense, offset by lower variable employee compensation expense. Stock-based compensation expense increased primarily due to the issuance of multi-year equity grants of time- and market-based RSUs (the “Multi-Year Equity Awards”) in the first quarter of fiscal year 2019, the impact of the change from annual to quarterly vesting of equity awards and the assumed CA equity awards. Our stock-based compensation expense for fiscal year 2019 included employee equity awards granted at higher grant-date fair values than those granted in prior years, which also contributed to the increase. We expect to incur additional research and development expense in future periods as a result of our acquisition of the Symantec Business and any future acquisitions we may make.

Selling, General and Administrative Expense

Selling, general and administrative expense increased $653 million, or 62%, in fiscal year 2019. Selling, general and administrative expense as a percentage of net revenue was 8% and 5% for fiscal years 2019 and 2018, respectively. The increase was primarily due to the acquisition of CA and higher stock-based compensation expense. Stock-based compensation expense increased primarily due to the issuance of the Multi-Year Equity Awards, the impact of the change from annual to quarterly vesting of equity awards and the assumed CA equity awards.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets recognized in operating expenses increased $1,357 million, or 251%, in fiscal year 2019. The increase was primarily due to the addition of amortization of intangible assets acquired in the CA Merger. We expect to incur additional amortization of acquisition-related intangible assets in future periods as a result of our acquisition of the Symantec Business and any further acquisitions we may make.

Restructuring, Impairment and Disposal Charges

Restructuring, impairment and disposal charges included in operating expenses increased $517 million, or 236%, in fiscal year 2019. The increase was primarily due to employee termination costs, as well as lease and other exit costs resulting from the CA Merger. We expect to incur additional restructuring charges in future periods as a result of our acquisition of the Symantec Business and any further acquisitions we may make.

Segment Operating Results

	Fiscal Year Ended			
Operating Income (Loss)	**November 3, 2019**	**November 4, 2018**	**$ Change**	**% Change**
	(In millions, except for percentages)			
Semiconductor solutions	$ 8,150	$ 9,090	$ (940)	(10)%
Infrastructure software	3,781	1,250	2,531	202 %
IP licensing	(2)	70	(72)	(103)%
Unallocated expenses	(8,485)	(5,275)	(3,210)	61 %
Total operating income	$ 3,444	$ 5,135	$ (1,691)	(33)%

Operating income from our semiconductor solutions segment decreased primarily due to lower demand for our wireless content in mobile handsets, as well as lower demand for our optocoupler, broadband, server storage connectivity and set-top box products. Fiscal year 2018 semiconductor solutions operating income benefited from a later than typical new mobile handset ramp with a major customer in the first quarter, which resulted in higher shipments in that quarter, as well as an extra week in the fiscal year as compared to fiscal year 2019. Operating income from our infrastructure software segment increased primarily due to contributions from our CA mainframe and enterprise software products.

Unallocated expenses include amortization of acquisition-related intangible assets; stock-based compensation expense; acquisition-related costs; restructuring, impairment and disposal charges; and other costs that are not used in evaluating the results of, or in allocating resources to, our segments. Unallocated expenses increased 61% in fiscal year 2019 mainly due to higher amortization of acquisition-related intangible assets, stock-based compensation expense, and restructuring, impairment and disposal charges primarily related to the CA Merger. The increase in stock-based compensation expense also due to the issuance of the Multi-Year Equity Awards and the impact of the change from annual to quarterly vesting of certain time-based equity awards.

Non-Operating Income and Expenses

Interest expense. Interest expense was $1,444 million and $628 million for fiscal years 2019 and 2018, respectively. Interest expense was higher in fiscal year 2019 primarily due to interest on the debt we incurred to finance the CA Merger in the first quarter of fiscal year 2019. We expect to incur additional interest expense in future periods as a result of term loan indebtedness associated with any future acquisitions, including our acquisition of the Symantec Business.

Other income, net. Other income, net was $226 million and $144 million in fiscal years 2019 and 2018, respectively. The increase was primarily due to an increase in unrealized gains on investments partially offset by losses on foreign currency remeasurement.

Table of Contents

Benefit from income taxes. Benefit from income taxes was $510 million and $8,084 million for fiscal years 2019 and 2018, respectively. The benefit from income taxes in fiscal year 2019 was primarily due to $232 million of excess benefit from stock-based awards that vested or were exercised during the year, $131 million from the recognition of gross unrecognized tax benefits as a result of audit settlements and lapses of statutes of limitations net of increases in balances related to tax positions taken during the current year, $80 million of benefit from deferred tax measurement in state and foreign jurisdictions, $66 million of benefit related to internal reorganizations, and $54 million of benefit from the partial release of our valuation allowance as a result of the CA Merger, partially offset by $113 million of expense from a change in estimate of our fiscal year 2018 benefit as a result of proposed U.S. Treasury regulations issued in fiscal year 2019 related to the 2017 Tax Reform Act. The benefit from income taxes in fiscal year 2018 was primarily due to income tax benefits recognized from the enactment of the 2017 Tax Reform Act and the Redomiciliation Transaction.

Fiscal Year 2018 Compared to Fiscal Year 2017

The following tables set forth our results of operations for the periods presented:

Statements of Operations Data:	**Fiscal Year Ended**			
	November 4, 2018	**October 29, 2017**	**November 4, 2018**	**October 29, 2017**
	(In millions)		**(As a percentage of net revenue)**	
Net revenue:				
Products	$ 19,754	$ 17,033	95 %	97 %
Subscriptions and services	1,094	603	5	3
Total net revenue	20,848	17,636	100	100
Cost of revenue:				
Cost of products sold	6,924	6,549	33	37
Cost of subscriptions and services	97	44	1	1
Purchase accounting effect on inventory	70	4	—	—
Amortization of acquisition-related intangible assets	3,004	2,511	14	14
Restructuring charges	20	19	—	—
Total cost of revenue	10,115	9,127	48	52
Gross margin	10,733	8,509	52	48
Research and development	3,768	3,302	18	19
Selling, general and administrative	1,056	789	5	4
Amortization of acquisition-related intangible assets	541	1,764	3	10
Restructuring, impairment and disposal charges	219	161	1	1
Litigation settlements	14	122	—	1
Total operating expenses	5,598	6,138	27	35
Operating income	$ 5,135	$ 2,371	25 %	13 %

The following table sets forth net revenue by segment for the periods presented:

Net Revenue

Net Revenue by Segment	Fiscal Year Ended November 4, 2018	Fiscal Year Ended October 29, 2017	$ Change	% Change
	(In millions, except for percentages)			
Semiconductor solutions	$ 18,934	$ 17,491	$ 1,443	8 %
Infrastructure software	1,780	—	1,780	—
IP licensing	134	145	(11)	(8)%
Total net revenue	$ 20,848	$ 17,636	$ 3,212	18 %

Net Revenue by Segment	Fiscal Year Ended November 4, 2018	Fiscal Year Ended October 29, 2017
	(As a percentage of net revenue)	
Semiconductor solutions	91 %	99 %
Infrastructure software	8	—
IP licensing	1	1
Total net revenue	100 %	100 %

Our total net revenue increased primarily due to the acquisition of Brocade in fiscal year 2018, as well as strong organic year-over-year growth.

Net revenue from our semiconductor solutions segment increased due to an increase in our wireless content in handsets and a later than typical new handset ramp with a major customer, which resulted in product shipments that typically would have occurred in the fourth quarter of fiscal year 2017 occurring in the first quarter of fiscal year 2018. Additionally, net revenue from our semiconductor solutions segment increased due to an increase in demand for our networking application-specific integrated circuit ("ASIC") products. These increases were partially offset by a decrease in demand for our set top box and optical products. Net revenue from our infrastructure software segment increased due to contributions from our FC SAN business.

Gross Margin

Gross margin was $10,733 million for fiscal year 2018 compared to $8,509 million for fiscal year 2017. Gross margin as a percentage of net revenue increased to 52% in fiscal year 2018 from 48% for fiscal year 2017. The fiscal year 2018 increases were primarily due to the addition of Brocade products, as well as a more favorable product mix, partially offset by an increase in amortization of acquisition-related intangible assets.

Research and Development Expense

Research and development expense increased $466 million, or 14%, in fiscal year 2018. Research and development expense remained relatively flat as a percentage of net revenue at 18% and 19% for fiscal years 2018 and 2017, respectively. The increase in research and development expense dollars for fiscal year 2018 was primarily due to the acquisition of Brocade, higher stock-based compensation expense, and higher variable employee compensation expense due to fiscal year 2018 operating performance. Stock-based compensation expense was higher in fiscal year 2018 primarily due to annual employee equity awards granted at higher grant-date fair values.

Selling, General and Administrative Expense

Selling, general and administrative expense increased $267 million, or 34%, in fiscal year 2018. Selling, general and administrative expense as a percentage of net revenue remained relatively flat at 5% and 4% for fiscal years 2018 and 2017, respectively. The increase in selling, general and administrative expense dollars for fiscal year 2018 was primarily due to the acquisition of Brocade and associated acquisition-related costs, as well as higher stock-based compensation expense. Stock-based compensation expense was higher in fiscal year 2018 primarily due to annual employee equity awards granted at higher grant-date fair values.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets recognized in operating expenses decreased $1,223 million, or 69%, in fiscal year 2018. The decrease was primarily due to the full amortization of certain intangible assets acquired as part of our acquisition of

Broadcom Corporation, partially offset by the addition of amortization of intangible assets acquired in the Brocade Merger.

Restructuring, Impairment and Disposal Charges

Restructuring, impairment and disposal charges included in operating expenses increased $58 million, or 36%, in fiscal year 2018. The increase was primarily due to an increase in restructuring activities resulting from the Brocade Merger, partially offset by a decrease in restructuring activities resulting from our acquisition of Broadcom Corporation.

Litigation Settlements

During fiscal years 2018 and 2017, we incurred $14 million and $122 million of litigation charges, respectively, associated with certain legal settlement agreements.

Table of Contents

Segment Operating Results

Operating Income by Segment	Fiscal Year Ended November 4, 2018	Fiscal Year Ended October 29, 2017	$ Change	% Change
	(In millions, except for percentages)			
Semiconductor solutions	$ 9,090	$ 7,900	$ 1,190	15 %
Infrastructure software	1,250	—	1,250	—
IP licensing	70	70	—	—
Unallocated expenses	(5,275)	(5,599)	324	(6)%
Total operating income	$ 5,135	$ 2,371	$ 2,764	117 %

Operating income from our semiconductor solutions segment increased due to an increase in our wireless content in handsets, as well as a later than typical new handset ramp with a major customer, which resulted in higher shipments in fiscal year 2018. Additionally, we experienced an increase in demand for our networking ASIC products. These increases were partially offset by a decrease in demand for our set-top box and optical products. Operating income from our infrastructure software segment increased primarily due to contributions from our FC SAN business.

Unallocated expenses include amortization of acquisition-related intangible assets, stock-based compensation expense, restructuring, impairment and disposal charges, acquisition-related costs, charges for litigation settlements, and other costs that are not used in evaluating the results of, or in allocating resources to, our segments. Unallocated expenses decreased 6% in fiscal year 2018 primarily due to decreases in amortization of acquisition-related intangible assets and charges for litigation settlements, substantially offset by increases in stock-based compensation expense, acquisition-related costs, purchase accounting effect on inventory, and restructuring, impairment and disposal charges.

Non-Operating Income and Expenses

Interest expense. Interest expense was $628 million and $454 million for fiscal years 2018 and 2017, respectively. Interest expense was higher in fiscal year 2018 primarily due to the October 2017 issuance of unsecured senior notes, as well as debt commitment fees paid in connection with the Brocade Merger.

Impairment on investment. We recognized $106 million in fiscal year 2018 for an other than temporary impairment of one of our cost method investments.

Loss on extinguishment of debt. Loss on extinguishment of debt was $166 million for fiscal year 2017. We issued senior unsecured notes in January 2017 to repay all of the term loans outstanding under our guaranteed, collateralized credit agreement dated February 1, 2016. As a result, we wrote-off $166 million of debt issuance costs.

Other income, net. Other income, net was $144 million and $74 million in fiscal years 2018 and 2017, respectively. The increase was primarily due to increases in interest income and gains on foreign currency remeasurement.

Provision for (benefit from) income taxes. Our benefit from income taxes was $8,084 million for fiscal year 2018, compared to a provision for income taxes of $35 million for fiscal year 2017. The benefit from income taxes in fiscal year 2018 was primarily due to the income tax benefits recognized from the enactment of the 2017 Tax Reform Act and the Redomiciliation Transaction. The provision for income taxes in fiscal year 2017 was primarily due to an increase in profit before tax and a discrete expense of $76 million resulting from entity reorganizations, partially offset by the recognition of $273 million of excess tax benefits from stock-based equity awards that vested or were exercised during fiscal year 2017 and, to a lesser extent, the recognition of previously unrecognized tax benefits primarily as a result of audit settlements.

Liquidity and Capital Resources

The following section discusses our principal liquidity and capital resources as well as our primary liquidity requirements and uses of cash. Our cash and cash equivalents are maintained in highly liquid investments with remaining maturities of 90 days or less at the time of purchase. We believe our cash equivalents are liquid and accessible.

Our primary sources of liquidity as of November 3, 2019 consisted of: (i) $5,055 million in cash and cash equivalents, (ii) cash we expect to generate from operations, (iii) available capacity under our $5 billion revolving credit facility (the “Revolving Facility”), and (iv) available capacity under our $2 billion commercial paper program. In addition, we may also generate cash from the sale of assets and debt or equity financing from time to time.

Our short-term and long-term liquidity requirements primarily arise from: (i) business acquisitions and investments we may make from time to time, (ii) working capital requirements, (iii) research and development and capital expenditure needs, (iv) cash dividend payments (if and when declared by the Board of Directors), (v) interest and principal payments related to outstanding indebtedness and (vi) payment of income taxes. Beginning April 2018, we settle withholding tax amounts due upon vesting of compensatory equity awards using cash on hand, and withholding from the grant recipient that number of shares having a value equivalent to the withholding tax amount ("Tax Shares"). This net settlement method reduces the dilutive effects of such awards as they vest. Previously, the Tax Shares were issued and mandatorily sold into the market, and the cash proceeds were used to pay such withholding tax amounts. This change results in an increased use of our cash as our outstanding equity awards vest. Our ability to fund these requirements will depend, in part, on our future cash flows, which are determined by our future operating performance and, therefore, subject to prevailing global macroeconomic conditions and financial, business and other factors, some of which are beyond our control.

Our capital expenditures for fiscal year 2019 were lower than fiscal year 2018, due primarily to the completion of construction at our Irvine and San Jose campuses. We expect capital expenditures to be higher in fiscal year 2020 as compared to fiscal year 2019 due to the Symantec Asset Purchase on November 4, 2019.

Our debt and liquidity needs increased as a result of completing the Symantec Asset Purchase. We funded $10.7 billion of cash consideration needed for that transaction with debt financing.

We believe that our cash and cash equivalents on hand, cash flows from operations, and the Revolving Facility will provide sufficient liquidity to operate our business and fund our current and assumed obligations for at least the next 12 months.

From time to time, we engage in discussions with third parties regarding potential acquisitions of, or investments in, businesses, technologies and product lines. Any such transaction, or evaluation of potential transactions, could require significant use of our cash and cash equivalents, or require us to increase our borrowings to fund such transactions. If we do not have sufficient cash to fund our operations or finance growth opportunities, including acquisitions, or unanticipated capital expenditures, our business and financial condition could suffer. In such circumstances, we may seek to obtain new debt or equity financing. However, we cannot assure you that such additional financing will be available on terms acceptable to us or at all. Our ability to service our senior unsecured notes and outstanding term loans (including those we borrowed to fund our acquisition of the Symantec Business) and any other indebtedness we may incur will depend on our ability to generate cash in the future. We may also elect to sell additional debt or equity securities for reasons other than those specified above.

Working Capital

Working capital decreased to $3,018 million at November 3, 2019 from $6,769 million at November 4, 2018. The decrease was attributable to the following:

- Accounts receivable decreased to $3,259 million at November 3, 2019 from $3,325 million at November 4, 2018, primarily due to a higher volume of trade accounts receivable factoring, partially offset by higher revenue.

- Inventory decreased to $874 million at November 3, 2019 from $1,124 million at November 4, 2018 primarily due to our continued focus on inventory management.

- Current portion of long-term debt increased $2,787 million primarily due to certain unsecured senior notes becoming due within the next twelve months.

-

Other current liabilities increased to $2,616 million at November 3, 2019 from $812 million at November 4, 2018 primarily due to the CA Merger and increases in contract liabilities from adoption of Accounting Standard Codification Topic 606 ("Topic 606"), notional pooling liabilities, restructuring reserves, taxes payable and interest payable.

These decreases in working capital were offset in part by the following:

- Cash and cash equivalents increased to $5,055 million at November 3, 2019 from $4,292 million at November 4, 2018 primarily due to $30,034 million in proceeds from borrowings, $9,697 million in net cash provided by operating activities, $3,679 million of Mandatory Convertible Preferred Stock issuance proceeds and $957 million in proceeds from sale of Veracode, partially offset by $16,800 million of debt repayments, $16,027 million paid for the CA Merger, $5,435 million of common stock repurchases, $4,235 million of dividend payments, and $972 million in payments of employee withholding taxes related to net share settled equity awards. See the "Cash Flows" section below for further details.

- Other current assets increased to $729 million at November 3, 2019 from $366 million at November 4, 2018 primarily due to assets acquired in the CA Merger and increases in contract assets from adoption of Topic 606 and prepaid taxes.

Working capital decreased to $6,769 million at November 4, 2018 from $13,294 million at October 29, 2017. The decrease was attributable to the following:

- Cash and cash equivalents decreased to $4,292 million at November 4, 2018 from $11,204 million at October 29, 2017 largely due to $7,258 million of common stock repurchases, $4,780 million paid for the Brocade Merger and $2,998 million of dividend and distribution payments, partially offset by $8,880 million in net cash provided by operating activities. See the "Cash Flows" section below for further details.

- Inventory decreased to $1,124 million at November 4, 2018 from $1,447 million at October 29, 2017, due to the timing of a major customer's new handset ramp and our continued focus on inventory management.

- Other current assets decreased to $366 million at November 4, 2018 from $724 million at October 29, 2017, primarily due to lower prepaid expenses, lower prepaid taxes as a result of the 2017 Tax Reform Act, and collection of other receivables.

- Other current liabilities increased to $812 million at November 4, 2018 from $681 million at October 29, 2017, primarily due to higher deferred revenue associated with the Brocade Merger.

These decreases in working capital were offset in part by the following:

- Accounts receivable increased to $3,325 million at November 4, 2018 from $2,448 million at October 29, 2017, primarily due to higher volume and revenue linearity.

- Accounts payable decreased to $811 million at November 4, 2018 from $1,105 million at October 29, 2017, primarily due to timing of vendor payments.

- Current portion of long-term debt decreased $117 million due to repayment of certain unsecured senior notes assumed in the acquisition of Broadcom Corporation.

Capital Returns

During fiscal year 2019, we repurchased and retired approximately 21 million shares of our common stock at a weighted average price of $258.52 under an $18 billion stock repurchase program previously authorized by our Board of Directors. During fiscal year 2018, we repurchased and retired approximately 32 million shares of our common stock at a weighted average price of $227.60 under this stock repurchase program. This authorization ended on November 3, 2019.

	Fiscal Year Ended		
	November 3, 2019	**November 4, 2018**	**October 29, 2017**
	(In millions, except per share data)		
Cash dividends and distributions declared and paid per share/unit	$ 10.60	$ 7.00	$ 4.08
Cash dividends and distributions declared and paid	$ 4,235	$ 2,998	$ 1,745
Stock repurchases	$ 5,435	$ 7,258	$ —

In addition, during fiscal years 2019 and 2018, we paid approximately $972 million and $56 million, respectively, in employee withholding taxes due upon the vesting of, and related to net settled equity awards. We withheld approximately 4 million and 0.2 million shares of common stock from employees in fiscal years 2019 and 2018, respectively, in connection with such net share settlements.

Cash Flows

	Fiscal Year Ended		
	November 3, 2019	**November 4, 2018**	**October 29, 2017**
		(In millions)	
Net cash provided by operating activities	$ 9,697	$ 8,880	$ 6,551
Net cash used in investing activities	(15,422)	(4,674)	(674)
Net cash provided by (used in) financing activities	6,488	(11,118)	2,230
Net change in cash and cash equivalents	$ 763	$ (6,912)	$ 8,107

Operating Activities

Cash provided by operating activities consisted of net income adjusted for certain non-cash items and changes in assets and liabilities. The $817 million increase in cash provided by operations during fiscal year 2019 compared to fiscal year 2018 was primarily due to the adjustments to net income for non-cash items and increases in working capital, partially offset by the decrease in net income. Non-cash adjustments to net income for fiscal year 2019 as compared to fiscal year 2018 primarily included a decrease in benefits from deferred taxes and other non-cash taxes and increases in amortization of intangible assets, stock-based compensation, and non-cash restructuring, impairment and disposal charges, partially offset by a decrease in impairment of investment.

The $2,329 million increase in cash provided by operations during fiscal year 2018 compared to fiscal year 2017 was due to the impact of net income, partially offset by adjustments to net income for non-cash items. Net income for fiscal year 2018 reflected an income tax benefit of $8,084 million principally resulting from the enactment of the 2017 Tax Reform Act and the impact from the Redomiciliation Transaction and related internal reorganizations. This benefit was primarily non-cash, resulting in a significant adjustment to net income, and was included in the deferred taxes and other non-cash taxes line in the consolidated statement of cash flows for fiscal year 2018. Other non-cash adjustments to net income for fiscal year 2018 as compared to fiscal year 2017 primarily included decreases in amortization of intangible assets and the non-cash portion of the debt extinguishment loss, partially offset by increases in stock-based compensation and impairment of investment.

Investing Activities

Cash used in investing activities primarily consisted of cash used for acquisitions, capital expenditures and investments, partially offset by proceeds from sales of businesses and assets. The $10,748 million increase in cash used in investing activities for fiscal year 2019 compared to fiscal year 2018 was primarily related to $16,027 million paid for the CA Merger in fiscal year 2019, partially offset by proceeds from sales of businesses as well as lower capital expenditures.

The $4,000 million increase in cash used in investing activities for fiscal year 2018 compared to fiscal year 2017 was primarily related to $4,780 million paid for the Brocade Merger in fiscal year 2018, partially offset by proceeds from sales of businesses as well as lower capital expenditures.

Financing Activities

Cash provided by (used in) financing activities primarily consisted of net proceeds and payments related to our long-term debt, dividend and distribution payments, stock repurchases, and the issuances of common stock pursuant to our employee equity incentive plans. The $17,606 million increase in cash related to financing activities for fiscal year 2019 compared to fiscal year 2018 was primarily due to a $14,207 million increase in net proceeds from borrowings, net proceeds of $3,679 million from issuance of preferred stock, and a $1,823 million decrease in common stock repurchases, partially offset by a $1,237 million increase in dividend and distribution payments and a $916 million increase in employee withholding taxes related to net share settled equity awards.

The $13,348 million increase in cash used in financing activities for fiscal year 2018 compared to fiscal year 2017 was primarily due to $7,258 million of stock repurchases, an increase in dividend and distribution payments and the repayment of debt.

Indebtedness

See Note 9. "Borrowings" included in Part II, Item 8. of this Annual Report on Form 10-K.

Contractual Commitments

		Payments Due by Period			
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
			(In millions)		
Debt principal, interest and fees	$ 39,038	$ 5,628	$ 10,163	$ 8,021	$ 15,226
Purchase commitments	716	652	64	—	—
Other contractual commitments	197	133	50	14	—
Operating lease obligations	800	115	179	116	390
Total	$ 40,751	$ 6,528	$ 10,456	$ 8,151	$ 15,616

Debt Principal, Interest and Fees. Represents principal, estimated interest and fees on borrowings. For borrowings subject to a floating interest rate, the estimated interest was based on the rate in effect during the last month of the fiscal year ended November 3, 2019.

Purchase Commitments. Represents unconditional purchase obligations that include agreements to purchase goods or services, primarily inventory, that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable price provisions, and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty. Cancellation for outstanding purchase orders for capital expenditures in connection with the internal fabrication facility expansion and construction of our new campuses is generally allowed but requires payment of all costs incurred through the date of cancellation and, therefore, cancelable purchase orders for these capital expenditures are included in the table above.

Other Contractual Commitments. Represents amounts payable pursuant to agreements related to information technology, human resources, financial infrastructure outsourcing services and other service agreements.

Operating Lease Obligations. Represents real property and equipment leased from third parties under non-cancelable operating leases.

Due to the inherent uncertainty with respect to the timing of future cash outflows associated with our unrecognized tax benefits at November 3, 2019, we are unable to reliably estimate the timing of cash settlement with the respective taxing authority. Therefore, $3,269 million of unrecognized tax benefits and accrued interest classified within other long-term liabilities on our consolidated balance sheet as of November 3, 2019 have been excluded from the contractual obligations table above.

Off-Balance Sheet Arrangements

We had no material off-balance sheet arrangements at November 3, 2019 as defined in Item 303(a)(4)(ii) of Regulation S-K under the Exchange Act.

Indemnifications

See Note 13. “Commitments and Contingencies” in Part II, Item 8 of this Form 10-K.

Accounting Changes and Recent Accounting Standards

For a description of accounting changes and recent accounting standards, including the expected dates of adoption and estimated effects, if any, in our consolidated financial statements, see Note 2. “Summary of Significant Accounting Policies” included in Part II, Item 8. of this Annual Report on Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Derivative Instruments

From time to time, we use foreign exchange forward contracts to hedge a portion of our exposures to changes in currency exchange rates, which result from our global operating and financing activities. Gains and losses from foreign currency transactions, as well as derivative instruments, were not significant for any period presented in the consolidated financial statements included in this Form 10-K. As of November 3, 2019, we did not have any outstanding foreign exchange forward contracts.

European Debt Exposures

We actively monitor our exposure to the European financial markets, including the impact of sovereign debt issues. We also seek to mitigate our risk by investing in fixed deposits with various financial institutions and we limit the amount we hold with any one institution. We do not have any direct investments in the sovereign debt of European countries. From time to time, we may have deposits with major European financial institutions. We also seek to mitigate collection risks from our customers by performing regular credit evaluations of our customers’ financial condition. As of November 3, 2019, we do not believe that we have any material direct or indirect exposure to the European financial markets.

Interest Rate Risk

At November 3, 2019, we had $1,600 million of outstanding term loans, which are subject to floating interest rates. A 1% change in the interest rate would affect interest expense on our term loans by approximately $16 million over the next 12 months.

Table of Contents

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

BROADCOM INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Broadcom Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Broadcom Inc. and its subsidiaries (the "Company") as of November 3, 2019 and November 4, 2018, and the related consolidated statements of operations, of comprehensive income, of equity and of cash flows for each of the three years in the period ended November 3, 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 November 3, 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 November 3, 2019 and November 4, 2018, and the results of its operations and its cash flows for each of the three years in the period ended November 3, 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 November 3, 2019, 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.

As described in Management's Report on Internal Control Over Financial Reporting, management has excluded CA, Inc. from its assessment of internal control over financial reporting as of November 3, 2019, because it was acquired by the Company in a purchase business combination during 2019. We have also excluded CA, Inc. from our audit of internal control over financial reporting. CA, Inc. is a wholly-owned subsidiary whose total assets and total revenues excluded from management's assessment and our audit of internal control over financial reporting represent 3% and 15%, respectively, of the related consolidated financial statement amounts as of and for the year ended November 3, 2019.

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.

Valuation of Developed Technology and Customer Contracts and Related Relationships Intangible Assets Acquired in the CA, Inc. Acquisition

As described in Notes 2 and 4 to the consolidated financial statements, the Company completed the acquisition of CA, Inc. during fiscal 2019 for net consideration of $16,094 million, of which $4,957 million of finite-lived developed technology and $4,190 million of finite-lived customer contracts and related relationships intangible assets were recorded. Management valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. Management valued the customer contracts and related relationships using the with-and-without-method under the income approach. In this method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. As disclosed by management, significant estimates and assumptions in estimating the fair value of the developed technology and the customer contracts and related relationships include future expected cash flows from product sales, customer contracts and acquired technologies, revenue growth rate, customer ramp up period, technology obsolescence rates, and discount rates.

The principal considerations for our determination that performing procedures relating to the valuation of the developed technology and customer contracts and relationships intangible assets acquired in the CA, Inc. acquisition is a critical audit matter are (i) there was a high degree of auditor judgment and subjectivity in applying our procedures relating to the fair value measurement of the developed technology and the customer contracts and related relationships due to the significant judgment by management when developing these estimates, (ii) significant audit effort was required in assessing the significant assumptions relating to the valuation of the developed technology and the customer contracts and related relationships, which include the revenue growth rate, the technology obsolescence rates, the customer ramp-up period, and the discount rates, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

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 acquisition accounting, including controls over management’s valuation of the developed technology and the customer contracts and related relationships and controls over development of the assumptions related to the valuation of the developed technology and the customer contracts and related relationships including the revenue growth rate, the technology obsolescence rates, the customer ramp-up period, and the discount rates. These procedures also included, among others, reading the purchase agreement and testing management’s process for determining the fair value of these intangible assets, including evaluating the appropriateness of the valuation methods, testing the completeness and accuracy of underlying data, and evaluating the reasonableness of the significant assumptions, which include the revenue growth rate, the technology obsolescence rates, the customer ramp-up period, and the discount rates. Evaluating the reasonableness of the revenue growth rate, the technology obsolescence rates, and the customer ramp-up period involved considering the past performance of the acquiree, benchmarking of peer companies and, for the revenue growth rate, industry data. Professionals with specialized skill and knowledge were used to assist us in evaluating the appropriateness of valuation methods and the reasonableness of the discount rates and the technology obsolescence rates.

Uncertain Tax Positions (“UTPs”)

As described in Notes 2 and 11 to the consolidated financial statements, the gross unrecognized tax benefits balance was $4,422 million as of November 3, 2019. As management has disclosed, management evaluates the exposure associated with various tax filing positions and accrues an income tax liability when such positions do not meet the more-likely-than-not threshold for recognition. A tax benefit from an UTP may be recognized when it is more likely than not that the position will be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits.

The principal considerations for our determination that performing procedures relating to the UTPs is a critical audit matter are (i) there was significant judgment by management when evaluating the technical merits of these tax positions, (ii) significant auditor judgment, subjectivity, and effort was required in understanding the relevant information and evaluating the technical merits of the tax positions, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

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 identification and recognition of the income tax liability for UTPs, including controls addressing completeness of the UTPs as well as controls over the measurement of the income tax liability. These procedures also included, among others, (i) testing management’s process for identifying potential new UTPs and evaluating possible outcomes for each UTP selected for testing, and (ii) testing the calculation of the liability for UTPs by jurisdiction, including management’s assessment of the technical merits of tax positions and estimates of the amount of tax benefit expected to be sustained for each UTP selected for testing. Professionals with specialized skill and knowledge were used to assist in the evaluation of the completeness and measurement of the Company’s UTPs, including the reasonableness of management’s assessment of whether certain tax positions are more-likely-than-not of being sustained and the amount of potential benefit to be realized, and the application of relevant tax laws.

/s/ PricewaterhouseCoopers LLP

San Jose, California
December 20, 2019

We have served as the Company’s auditor since 2006.

Table of Contents

BROADCOM INC.

CONSOLIDATED BALANCE SHEETS

	November 3, 2019	November 4, 2018
	(In millions, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 5,055	$ 4,292
Trade accounts receivable, net	3,259	3,325
Inventory	874	1,124
Other current assets	729	366
Total current assets	9,917	9,107
Long-term assets:		
Property, plant and equipment, net	2,565	2,635
Goodwill	36,714	26,913
Intangible assets, net	17,554	10,762
Other long-term assets	743	707
Total assets	$ 67,493	$ 50,124
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 855	$ 811
Employee compensation and benefits	641	715
Current portion of long-term debt	2,787	—
Other current liabilities	2,616	812
Total current liabilities	6,899	2,338
Long-term liabilities:		
Long-term debt	30,011	17,493
Other long-term liabilities	5,613	3,636
Total liabilities	42,523	23,467
Commitments and contingencies (Note 13)		
Preferred stock dividend obligation	29	—
Stockholders' equity:		
Preferred stock, $0.001 par value; 100 shares authorized; 8.00% Mandatory Convertible Preferred Stock, Series A, 4 and 0 shares issued and outstanding; aggregate liquidation value of $3,738 and $0 as of November 3, 2019 and November 4, 2018, respectively	—	—
Common stock, $0.001 par value; 2,900 shares authorized; 398 and 408 shares issued and outstanding as of November 3, 2019 and November 4, 2018, respectively	—	—
Additional paid-in capital	25,081	23,285
Retained earnings	—	3,487
Accumulated other comprehensive loss	(140)	(115)
Total stockholders' equity	24,941	26,657
Total liabilities and equity	$ 67,493	$ 50,124

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents

BROADCOM INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Fiscal Year Ended		
	November 3, 2019	November 4, 2018	October 29, 2017
	(In millions, except per share data)		
Net revenue:			
Products	$ 18,117	$ 19,754	$ 17,033
Subscriptions and services	4,480	1,094	603
Total net revenue	22,597	20,848	17,636
Cost of revenue:			
Cost of products sold	6,208	6,924	6,549
Cost of subscriptions and services	515	97	44
Purchase accounting effect on inventory	—	70	4
Amortization of acquisition-related intangible assets	3,314	3,004	2,511
Restructuring charges	77	20	19
Total cost of revenue	10,114	10,115	9,127
Gross margin	12,483	10,733	8,509
Research and development	4,696	3,768	3,302
Selling, general and administrative	1,709	1,056	789
Amortization of acquisition-related intangible assets	1,898	541	1,764
Restructuring, impairment and disposal charges	736	219	161
Litigation settlements	—	14	122
Total operating expenses	9,039	5,598	6,138
Operating income	3,444	5,135	2,371
Interest expense	(1,444)	(628)	(454)
Impairment on investment	—	(106)	—
Loss on extinguishment of debt	—	—	(166)
Other income, net	226	144	74
Income from continuing operations before income taxes	2,226	4,545	1,825
Provision for (benefit from) income taxes	(510)	(8,084)	35
Income from continuing operations	2,736	12,629	1,790
Loss from discontinued operations, net of income taxes	(12)	(19)	(6)
Net income	2,724	12,610	1,784
Dividends on preferred stock	29	—	—
Net income attributable to noncontrolling interest	—	351	92
Net income attributable to common stock	$ 2,695	$ 12,259	$ 1,692
Basic income per share attributable to common stock:			
Income per share from continuing operations	$ 6.80	$ 29.37	$ 4.19
Loss per share from discontinued operations	(0.03)	(0.04)	(0.01)
Net income per share	$ 6.77	$ 29.33	$ 4.18
Diluted income per share attributable to common stock:			
Income per share from continuing operations	$ 6.46	$ 28.48	$ 4.03
Loss per share from discontinued operations	(0.03)	(0.04)	(0.01)
Net income per share	$ 6.43	$ 28.44	$ 4.02

Weighted-average shares used in per share calculations:			
Basic	398	418	405
Diluted	419	431	421

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Fiscal Year Ended		
	November 3, 2019	**November 4, 2018**	**October 29, 2017**
		(In millions)	
Net income	$ 2,724	$ 12,610	$ 1,784
Other comprehensive income (loss), net of tax:			
Change in actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	(24)	(8)	43
Other comprehensive income (loss)	(24)	(8)	43
Comprehensive income	2,700	12,602	1,827
Comprehensive income attributable to noncontrolling interest	—	351	92
Comprehensive income attributable to Broadcom Inc. stockholders	$ 2,700	$ 12,251	$ 1,735

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Fiscal Year Ended		
	November 3, 2019	November 4, 2018	October 29, 2017
		(In millions)	
Cash flows from operating activities:			
Net income	$ 2,724	$ 12,610	$ 1,784
Adjustments to reconcile net income to net cash provided by operating activities:			
Amortization of intangible assets	5,239	3,566	4,286
Depreciation	569	515	451
Stock-based compensation	2,185	1,227	921
Deferred taxes and other non-cash taxes	(934)	(8,270)	(173)
Impairment on investment	—	106	—
Non-cash portion of debt extinguishment loss	—	—	166
Non-cash restructuring, impairment and disposal charges	133	21	71
Non-cash interest expense	90	24	24
Other	(125)	37	7
Changes in assets and liabilities, net of acquisitions and disposals:			
Trade accounts receivable, net	486	(652)	(267)
Inventory	250	417	(39)
Accounts payable	(42)	(325)	(97)
Employee compensation and benefits	(294)	6	109
Contributions to defined benefit pension plans	—	(130)	(361)
Other current assets and current liabilities	(283)	369	(490)
Other long-term assets and long-term liabilities	(301)	(641)	159
Net cash provided by operating activities	9,697	8,880	6,551
Cash flows from investing activities:			
Acquisitions of businesses, net of cash acquired	(16,033)	(4,800)	(40)
Proceeds from sales of businesses	957	773	10
Purchases of property, plant and equipment	(432)	(635)	(1,069)
Proceeds from disposals of property, plant and equipment	88	239	441
Purchases of investments	(5)	(249)	(207)
Proceeds from sales and maturities of investments	5	54	200
Other	(2)	(56)	(9)
Net cash used in investing activities	(15,422)	(4,674)	(674)
Cash flows from financing activities:			
Proceeds from long-term borrowings	28,793	—	17,426
Repayment of debt	(16,800)	(973)	(13,668)
Other borrowings	1,241	—	—
Dividend and distribution payments on common stock and exchangeable limited partnership units	(4,235)	(2,998)	(1,745)
Repurchases of common stock - repurchase program	(5,435)	(7,258)	—
Shares repurchased for tax withholdings on vesting of equity awards	(972)	(56)	—
Issuance of preferred stock, net	3,679	—	—
Issuance of common stock	253	212	257
Other	(36)	(45)	(40)
Net cash provided by (used in) financing activities	6,488	(11,118)	2,230

Net change in cash and cash equivalents	763	(6,912)	8,107
Cash and cash equivalents at beginning of period	4,292	11,204	3,097
Cash and cash equivalents at end of period	$ 5,055	$ 4,292	$ 11,204
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 1,287	$ 547	$ 310
Cash paid for income taxes	$ 741	$ 512	$ 349

The accompanying notes are an integral part of these consolidated financial statements.

[Table of Contents](#)

BROADCOM INC.

CONSOLIDATED STATEMENTS OF EQUITY

	Special Preference Preferred Stock		8.00% Mandatory Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Retained Earnings/ (Accumulated Deficit)	Accumulated Other Comprehensive Loss	Total Broadcom Inc. Stockholders' Equity	Non Int
	Shares	Amount	Shares	Par Value	Shares	Par Value					
	(In millions)										
Balance as of October 30, 2016	23	$ —	—	$ —	398	$ —	$ 19,241	$ (215)	$ (134)	$18,892	$ 2
Net income	—	—	—	—	—	—	—	1,692	—	1,692	
Other comprehensive income	—	—	—	—	—	—	—	—	43	43	
Cumulative effect of accounting change	—	—	—	—	—	—	—	47	—	47	
Dividends to common stockholders	—	—	—	—	—	—	—	(1,653)	—	(1,653)	
Distribution by Broadcom Cayman L.P. on exchangeable limited partnership units	—	—	—	—	—	—	—	—	—	—	
Exchange of exchangeable limited partnership units for common stock and cancellation of preferred stock	(1)	—	—	—	1	—	86	—	—	86	
Common stock issued	—	—	—	—	10	—	257	—	—	257	
Stock-based compensation	—	—	—	—	—	—	921	—	—	921	
Balance as of October 29, 2017	22	—	—	—	409	—	20,505	(129)	(91)	20,285	2
Net income	—	—	—	—	—	—	—	12,259	—	12,259	
Other comprehensive loss	—	—	—	—	—	—	—	—	(8)	(8)	
	—	—	—	—	—	—	—	(237)	(16)	(253)	

Cumulative effect of accounting change											
Fair value of partially vested equity awards assumed in connection with the acquisition of Brocade Communications Systems, Inc.	—	—	—	—	—	—	8	—	—	8	
Dividends to common stockholders	—	—	—	—	—	—	—	(2,921)	—	(2,921)	
Distribution by Broadcom Cayman L.P. on exchangeable limited partnership units	—	—	—	—	—	—	—	—	—	—	
Exchange of exchangeable limited partnership units for common stock and redemption of preferred stock due to the Redomiciliation Transaction	(22)	—	—	—	22	—	3,162	—	—	3,162	(3
Common stock issued	—	—	—	—	9	—	212	—	—	212	
Stock-based compensation	—	—	—	—	—	—	1,227	—	—	1,227	
Repurchases of common stock	—	—	—	—	(32)	—	(1,773)	(5,485)	—	(7,258)	
Shares repurchased for tax withholdings on vesting of equity awards	—	—	—	—	—	—	(56)	—	—	(56)	
Balance as of November 4, 2018	—	—	—	—	408	—	23,285	3,487	(115)	26,657	
Net income	—	—	—	—	—	—	—	2,724	—	2,724	
Other comprehensive loss	—	—	—	—	—	—	—	—	(24)	(24)	
Cumulative effect of accounting change	—	—	—	—	—	—	—	8	(1)	7	
Fair value of partially vested	—	—	—	—	—	—	67	—	—	67	

equity awards assumed in connection with the acquisition of CA, Inc.											
Dividends to common stockholders	—	—	—	—	—	—	(880)	(3,355)	—	(4,235)	
Dividends to preferred stockholders	—	—	—	—	—	—	(29)	—	—	(29)	
Common stock issued	—	—	—	—	15	—	253	—	—	253	
Preferred stock issued, net			4	—		—	3,679	—	—	3,679	
Stock-based compensation	—	—	—	—	—	—	2,260	—	—	2,260	
Repurchases of common stock	—	—	—	—	(21)	—	(2,571)	(2,864)	—	(5,435)	
Shares repurchased for tax withholdings on vesting of equity awards	—	—	—	—	(4)	—	(983)	—	—	(983)	
Balance as of November 3, 2019	—	$ —	4	$ —	398	$ —	$ 25,081	$ —	$ (140)	$24,941	$

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Overview and Basis of Presentation

Overview

Broadcom Inc. ("Broadcom"), a Delaware corporation, is the successor to Broadcom Limited (now Broadcom Pte. Ltd.), a Singapore company ("Broadcom-Singapore"). On April 4, 2018, all Broadcom-Singapore outstanding ordinary shares were exchanged for newly issued shares of Broadcom common stock (the "Redomiciliation Transaction"). As a result, Broadcom-Singapore became a wholly-owned subsidiary of Broadcom. In addition, all outstanding exchangeable limited partnership units ("LP Units") of Broadcom Cayman L.P. (the "Partnership") were mandatorily exchanged (the "Mandatory Exchange") for newly issued shares of Broadcom common stock and all limited partners of the Partnership became common stockholders of Broadcom. Also, all related outstanding special preference shares of Broadcom-Singapore were automatically redeemed upon the Mandatory Exchange. The limited partners no longer hold a noncontrolling interest and we deregistered the Partnership.

The Redomiciliation Transaction was accounted for as an exchange of equity interests among entities under common control and the historical basis of accounting was retained as if the entities had always been combined for financial reporting purposes.

The financial statements relate to Broadcom-Singapore for periods prior to April 4, 2018, the effective date of the Redomiciliation Transaction, and relate to Broadcom for periods after April 4, 2018. Unless stated otherwise or the context otherwise requires, references to "Broadcom," "we," "our" and "us" mean Broadcom and its consolidated subsidiaries from and after the effective time of the Redomiciliation Transaction and, prior to that time, to our predecessor, Broadcom-Singapore.

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Our infrastructure software solutions enable customers to plan, develop, automate, manage, and secure applications across mainframe, distributed, mobile, and cloud platforms.

Basis of Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal year ended November 3, 2019 ("fiscal year 2019") was a 52-week fiscal year. The first quarter of our fiscal year 2019 ended on February 3, 2019, the second quarter ended on May 5, 2019 and the third quarter ended on August 4, 2019. Our fiscal year ended November 4, 2018 ("fiscal year 2018") was a 53-week fiscal year, with the first fiscal quarter containing 14 weeks. Our fiscal year ended October 29, 2017 ("fiscal year 2017") was a 52-week fiscal year.

On November 5, 2018 (the "CA Acquisition Date"), we acquired CA, Inc. ("CA"). On November 17, 2017, we acquired Brocade Communications Systems, Inc. ("Brocade"). The accompanying consolidated financial statements include the results of operations of CA and Brocade commencing as of their respective acquisition dates. See Note 4. "Acquisitions" for additional information.

Subsequent to our acquisition of CA (the "CA Merger"), we changed our organizational structure, resulting in three reportable segments: semiconductor solutions, infrastructure software and intellectual property ("IP") licensing. Prior period segment results have been recast to conform to the current presentation. See Note 12. "Segment Information" for additional information.

The accompanying consolidated financial statements include the accounts of Broadcom and its subsidiaries and have been prepared in accordance with generally accepted principles in the United States ("GAAP"). All intercompany balances and transactions have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Foreign currency remeasurement. We operate in a U.S. dollar functional currency environment. As such, foreign currency assets and liabilities are remeasured into U.S. dollars at current exchange rates except for non-monetary items such as inventory and property, plant and equipment, which are remeasured at historical exchange rates. The effects of foreign currency remeasurement were not material for any period presented.

Use of estimates. The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates, and such differences could affect the results of operations reported in future periods.

Cash and cash equivalents. We consider all highly liquid investment securities with original or remaining maturities of three months or less at the date of purchase to be cash equivalents. We determine the appropriate classification of our cash and cash equivalents at the time of purchase.

Trade accounts receivable, net. Trade accounts receivable are recognized at the invoiced amount and do not bear interest. Accounts receivable are reduced by an allowance for doubtful accounts, which is our best estimate of the amount of probable credit losses in our existing accounts receivable. We determine the allowance based on customer-specific experience and the aging of such receivables, among other factors. Allowances for doubtful accounts were not material as of November 3, 2019 or November 4, 2018. Accounts receivable are also recognized net of sales returns and distributor credit allowances. These amounts are recognized when it is both probable and estimable that discounts will be granted or products will be returned. Allowances for sales returns and distributor credit allowances at November 3, 2019 and November 4, 2018 were $178 million and $161 million, respectively.

Concentrations of credit risk and significant customers. Our cash, cash equivalents and accounts receivable are potentially subject to concentration of credit risk. Cash and cash equivalents may be redeemable upon demand and are maintained with several financial institutions that management believes are of high credit quality and therefore bear minimal credit risk. We seek to mitigate our credit risks by spreading such risks across multiple counterparties and monitoring the risk profile of these counterparties. Our accounts receivable are derived from revenue earned from customers located both within and outside the U.S. We mitigate collection risks from our customers by performing regular credit evaluations of our customers' financial conditions, and require collateral, such as letters of credit and bank guarantees, in certain circumstances.

Concentration of other risks. We operate in markets that are highly competitive and rapidly changing. Significant technological changes, shifting customer needs, the emergence of competitive products with new capabilities, general economic conditions worldwide, the ability to safeguard patents and other intellectual property in a rapidly evolving market and reliance on assembly and test subcontractors, third-party wafer fabricators and independent distributors and other factors could affect our financial results.

Inventory. We value our inventory at the lower of actual cost or net realizable value of the inventory, with cost being determined under the first-in, first-out method. We record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. The excess and obsolete balance determined by this analysis becomes the basis for our excess and obsolete inventory charge and the written-down value of the inventory becomes its new cost basis.

Retirement benefits. Post-retirement benefit plan assets and liabilities are estimates of benefits that we expect to pay to eligible retirees. We consider various factors in determining the value of our post-retirement plan assets and liabilities, including the number of employees that we expect to receive benefits and other actuarial assumptions.

For defined benefit pension plans, we consider various factors in determining our respective pension liabilities and net periodic benefit costs, including the number of employees that we expect to receive benefits, their salary levels and years of service, the expected return on plan assets, the discount rate, the timing of the payment of benefits, and other actuarial assumptions. If the actual results and events of the retirement benefit plans differ from our current assumptions, the benefit obligations may be over- or under-valued.

The key benefit plan assumptions are the discount rate and the expected rate of return on plan assets. The U.S. discount rates are based on the results of matching expected plan benefit payments with cash flows from a hypothetical yield curve constructed with high-quality corporate bond yields. The U.S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy.

For the non-U.S. plans, we set assumptions specific to each country. We have elected to measure post-retirement benefit plan and defined benefit pension plan assets and liabilities as of October 31, which is the month-end that is closest to our fiscal year-ends.

Derivative instruments. We are subject to foreign currency risks for transactions denominated in foreign currencies, primarily the Singapore Dollar, Israeli Shekel, Euro, Japanese Yen and Indian Rupee. Therefore, we enter into foreign exchange forward contracts to manage financial exposures resulting from the changes in the exchange rates of these foreign currencies. These contracts are designated at inception as hedges of the related foreign currency exposures, which include committed and forecasted revenue and expense transactions that are denominated in currencies other than the functional currency of the subsidiary which has the exposure. We exclude time value from the measurement of effectiveness. To achieve hedge accounting, contracts must reduce the foreign currency exchange rate risk otherwise inherent in the amount and duration of the hedged exposures and comply with established risk management policies; our hedging contracts generally mature within three months. We do not use derivative financial instruments for speculative or trading purposes.

We designate our forward contracts as either cash flow or fair value hedges. All derivatives are recognized on the consolidated balance sheets at their fair values based on Level 2 inputs as defined in the fair value hierarchy. The accounting for gains and losses resulting from changes in fair value depends on the use of the derivative and whether it is designated and qualifies for hedge accounting. For derivative instruments that are designated and qualify as fair value hedges, changes in value of the instruments are recognized in net income in the current period. Such hedges are recognized in net income and are offset by the changes in fair value of the underlying assets or liabilities being hedged. For derivative instruments that are designated and qualify as cash flow hedges, changes in the value of the effective portion of the derivative instrument are recognized in accumulated other comprehensive loss, a component of stockholders' equity. These amounts are then reclassified and recognized in net income when either the forecasted transaction affects earnings or it becomes probable the forecasted transaction will not occur. Changes in the fair value of the ineffective portion of derivative instruments are recognized in net income in the current period, which have not been material to date. Changes in the value of derivative instruments not designated as hedges are recognized in other income, net, in our consolidated statements of operations. We did not have any outstanding foreign exchange forward contracts as of November 3, 2019 or November 4, 2018.

Property, plant and equipment. Property, plant and equipment are stated at cost less accumulated depreciation and amortization. Additions, improvements and major renewals are capitalized, and maintenance, repairs and minor renewals are expensed as incurred. Assets are held in construction in progress until placed in service, upon which date, we begin to depreciate these assets. When assets are retired or disposed of, the assets and related accumulated depreciation and amortization are removed from our property, plant and equipment balances and the resulting gain or loss is reflected in the consolidated statements of operations. Buildings and leasehold improvements are generally depreciated over 15 to 40 years, or over the lease period, whichever is shorter, and machinery and equipment are generally depreciated over three to ten years. We use the straight-line method of depreciation for all property, plant and equipment.

Fair value measurement. Fair value is defined as the price that would be received upon sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. A three level hierarchy is applied to prioritize the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

The three levels of the fair value hierarchy under the guidance for fair value measurements are described below:

Level 1 — Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Our Level 1 assets include cash equivalents, banker's acceptances, trading securities investments and investment funds. We measure trading securities investments and investment funds at quoted market prices as they are traded in an active market with sufficient volume and frequency of transactions.

Level 2 — Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. If the asset or liability has a specified contractual term, a Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 — Level 3 inputs are unobservable inputs for the asset or liability in which there is little, if any, market activity for the asset or liability at the measurement date. Level 3 assets and liabilities include cost method investments, goodwill, intangible assets, and property, plant and equipment, which are measured at fair value using a discounted cash flow approach when they are impaired. Quantitative information for Level 3 assets and liabilities reviewed at each reporting period includes indicators of significant deterioration in the earnings performance, credit rating, asset quality, business prospects of the investee, and financial indicators of the investee's ability to continue as a going concern.

Business combinations. We account for business combinations under the acquisition method of accounting, which requires us to recognize separately from goodwill the assets acquired and the liabilities assumed at their acquisition date fair values. While we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recognized in our consolidated statements of operations. Accounting for business combinations requires our management to make significant estimates and assumptions, especially at the acquisition date including our estimates for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from the management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain acquired intangible assets under the income approach include growth in future expected cash flows from product sales, customer contracts and acquired technologies, revenue growth rate, customer ramp-up period, technology obsolescence rates, expected costs to develop in-process research and development ("IPR&D") into commercially viable products, estimated cash flows from the projects when completed and discount rates. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates or actual results.

Goodwill. Goodwill represents the excess of purchase price and related costs over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Goodwill is not amortized but is reviewed annually (or more frequently if impairment indicators arise) for impairment. To review for impairment we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit's net book value. If the fair value of the reporting unit is greater than its net book value, there is no impairment. Otherwise, we calculate the implied fair value of goodwill by deducting the fair value of all tangible and intangible assets, excluding goodwill, of the reporting unit from the fair value of the reporting unit. The implied fair value of goodwill is compared to the carrying value of goodwill. If the implied fair value of goodwill is less than the carrying value of goodwill, an impairment loss is recognized equal to the difference. Determining the fair value of a reporting unit involves the use of significant estimates and assumptions.

Long-lived assets. Purchased finite-lived intangible assets are carried at cost less accumulated amortization. Amortization is recognized over the periods during which the intangible assets are expected to contribute to our cash flows. Purchased IPR&D projects are capitalized at fair value as an indefinite-lived intangible asset and assessed for impairment thereafter. Upon completion of each underlying project, IPR&D assets are reclassified as amortizable purchased intangible assets and amortized over their estimated useful lives. If an IPR&D project is abandoned, we recognize the carrying value of the related intangible asset in our consolidated statements of operations in the period it is abandoned. On a quarterly basis, we monitor factors and changes in circumstances that could indicate carrying amounts of long-lived assets, including purchased intangible assets and property, plant and equipment, may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, and (iii) significant negative industry or economic trends. An impairment loss must be measured if the sum of the expected future cash flows (undiscounted and before interest) from the use and eventual disposition of the asset (or asset group) is less than the net book value of the asset (or asset group). The amount of the impairment loss will generally be measured as the difference between the net book value of the asset (or asset group) and the estimated fair value.

Warranty. We accrue for the estimated costs of product warranties at the time revenue is recognized. Product warranty costs are estimated based upon our historical experience and specific identification of the products requirements, which may fluctuate based on product mix. Additionally, we accrue for warranty costs associated with occasional or unanticipated product quality issues if a loss is probable and can be reasonably estimated.

Revenue recognition. We account for a contract with a customer when both parties have approved the contract and are committed to perform their respective obligations, each party's rights can be identified, payment terms can be identified, the contract has commercial substance, and it is probable we will collect substantially all of the consideration we are entitled to. Revenue is recognized when, or as, performance obligations are satisfied by transferring control of a promised product or service to a customer.

Nature of Products and Services

Our products and services can be broadly categorized as sales of products and subscriptions and services. The following is a description of the principal activities from which we generate revenue.

Products. We recognize revenue from sales to direct customers and distributors when control transfers to the customer. Rebates and incentives offered to distributors, which are earned when sales to end customers are completed, are estimated at the point of revenue recognition. We have elected to exclude from the transaction price any taxes collected from a customer and to account for shipping and handling activities performed after a customer obtains control of the product as activities to fulfill the promise to transfer the product.

Subscriptions and services. Our subscriptions and services revenue consists of sales and royalties from software arrangements, support services, professional services, transfer of IP, and non-recurring engineering ("NRE") arrangements.

Revenue from software arrangements primarily consists of fees, which may be paid either at contract inception or in installments over the contract term, that provide customers with a right to use the software, access general support and maintenance, and utilize our professional services.

Our software licenses have standalone functionality from which customers derive benefit, and the customer obtains control of the software when it is delivered or made available for download. We believe that for the majority of software arrangements, customers derive significant benefit from the ongoing support we provide. Our CA-related subscriptions and services arrangements permit our customers to unilaterally terminate or cancel these arrangements at any time at the customer's convenience, referred to as termination for convenience provisions, without substantive termination penalty and receive a pro-rata refund of any prepaid fees. Accordingly, we account for arrangements with these termination for convenience provisions as a series of daily contracts, resulting in a ratable revenue recognition of software revenue over the contractual period.

Support services consist primarily of telephone support and the provision of unspecified updates and upgrades on a when-and-if-available basis. Support services represent stand-ready obligations for which revenue is recognized ratably over the term of the arrangement.

Professional services consist of implementation, consulting, customer education and customer training services. The obligation to provide professional services is generally satisfied over time, with the customer simultaneously receiving and consuming the benefits as we satisfy our performance obligations.

Rights to our IP are either sold or licensed to a customer. IP revenue recognition is dependent on the nature and terms of each agreement. We recognize IP revenue upon delivery of the IP if there are no substantive future obligations to perform under the arrangement. Sales-based or usage-based royalties from the license of IP are recognized at the later of the period the sales or usages occur or the satisfaction of the performance obligation to which some or all of the sales-based or usage-based royalties have been allocated.

There are two main categories of NRE contracts which we enter into with our customers: (a) NRE contracts in which we develop a custom chip and (b) NRE contracts in which we accelerate our development of a new chip upon the customer's request. The majority of our

NRE contract revenues meet the over time criteria. As such, revenue is recognized over the development period with the measure of progress using the input method based on costs incurred to total cost (“cost-to-cost”) as the services are provided. For NRE contracts that do not meet the over time criteria, revenue is recognized at a point in time when the NRE services are complete.

Material rights. Contracts with customers may also include material rights that are also performance obligations. These include the right to renew or receive products or services at a discounted price in the future. Revenue allocated to material rights is recognized when the customer exercises the right or the right expires.

Arrangements with Multiple Performance Obligations

Our contracts may contain more than one of the products and services listed above, each of which is separately accounted for as a distinct performance obligation.

Allocation of consideration. We allocate total contract consideration to each distinct performance obligation in a bundled arrangement on a relative standalone selling price basis. The standalone selling price reflects the price we would charge for a specific product or service if it were sold separately in similar circumstances and to similar customers.

Standalone selling price. When available, we use directly observable transactions to determine the standalone selling prices for performance obligations. Our estimates of standalone selling price for each performance obligation require judgment that considers multiple factors, including, but not limited to, historical discounting trends for products and services and pricing practices through different sales channels, gross margin objectives, internal costs, competitor pricing strategies, technology lifecycles and market conditions.

We separately determine the standalone selling prices by product or service type. Additionally, we segment the standalone selling prices for products where the pricing strategies differ, and where there are differences in customers and circumstances that warrant segmentation.

We also estimate the standalone selling price of our material rights. Lastly, we estimate the value of the customer's option to purchase or receive additional products or services at a discounted price by estimating the incremental discount the customer would obtain when exercising the option and the likelihood that the option would be exercised.

Other Policies and Judgments

Contract modifications. We may modify contracts to offer customers additional products or services. Each of the additional products and services are generally considered distinct from those products or services transferred to the customer before the modification. We evaluate whether the contract price for the additional products and services reflects the standalone selling price as adjusted for facts and circumstances applicable to that contract. In these cases, we account for the additional products or services as a separate contract. In other cases where the pricing in the modification does not reflect the standalone selling price as adjusted for facts and circumstances applicable to that contract, we account for the additional products or services as part of the existing contract on a prospective basis, on a cumulative catch-up basis, or on a combination of both based on the nature of modification. In instances where the pricing in the modification offers the customer a credit for a prior arrangement, we adjust our variable consideration reserves for returns and other concessions.

Right of return. Certain contracts contain a right of return that allows the customer to cancel all or a portion of the product or service and receive a credit. We estimate returns based on historical returns data which is constrained to an amount for which a material revenue reversal is not probable. We do not recognize revenue for products or services that are expected to be returned.

Transition practical expedient elected. We do not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed. For contracts that were modified before the beginning of the earliest reporting period presented, we have not retrospectively restated the contract for those modifications. We have disclosed the aggregate effect of all modifications when identifying the satisfied and unsatisfied performance obligations for purposes of determining the transaction price and allocating the transaction price at transition.

Research and development. Research and development expense consists primarily of personnel costs for our engineers and third parties engaged in the design and development of our products, software and technologies, including salary, bonus and stock-based compensation expense, project material costs, services and depreciation. Such costs are charged to research and development expense as they are incurred.

Stock-based compensation expense. We recognize compensation expense for time-based restricted stock units ("RSUs") using the straight-line amortization method based on the fair value of RSUs on the date of grant. The fair value of RSUs is the closing market price of Broadcom common stock on the date of grant, reduced by the present value of dividends expected to be paid on Broadcom common stock prior to vesting. We recognize compensation expense for time-based stock options and employee stock purchase plan rights under the Broadcom Inc. Employee Stock Purchase Plan, as amended ("ESPP") based on the estimated grant-date fair value determined using the Black-Scholes valuation model with a straight-line amortization method.

Certain equity awards include both service and market conditions. The fair value of market-based awards is estimated on the date of grant using the Monte Carlo simulation technique. Compensation expense for market-based awards is amortized based upon a graded vesting method over the service period.

We estimate forfeitures expected to occur and recognize stock-based compensation expense for such awards expected to vest. Changes in the estimated forfeiture rates can have a significant effect on stock-based compensation expense since the effect of adjusting the rate is recognized in the period the forfeiture estimate is changed.

Shipping and handling costs. Our shipping and handling costs charged to customers are included in net revenue and the associated expense is included in total cost of revenue in the consolidated statements of operations for all periods presented.

Litigation and settlement cost. We are involved in legal actions and other matters arising in our recent business acquisitions and in the normal course of business. We recognize an estimated loss contingency when the outcome is probable prior to issuance of the consolidated financial statements and we are able to reasonably estimate the amount or range of any possible loss.

Taxes on income. We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the consolidated financial statements and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We recognize net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. If we determine that we are able to realize our deferred income tax assets in the future in excess of their net carrying values, we adjust the valuation allowance and reduce the provision for income taxes. Likewise, if we determine that we are not able to realize all or part of our net deferred tax assets, we increase the provision for income taxes in the period such determination is made.

We account for uncertainty in income taxes in accordance with the applicable accounting guidance on income taxes. This guidance provides that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits.

Net income per share. Basic net income per share is computed by dividing net income attributable to common stock by the weighted-average number of shares of common stock outstanding during the period. Diluted net income per share is computed by dividing net income attributable to common stock by the weighted-average number of shares of common stock and potentially dilutive shares of common stock outstanding during the period. Diluted shares outstanding include the dilutive effect of in-the-money stock options, unvested RSUs and ESPP rights (together referred to as “equity awards”), as well as convertible preferred stock and LP Units. Potentially dilutive shares whose effect would have been antidilutive are excluded from the computation of diluted net income per share.

The dilutive effect of equity awards is calculated based on the average stock price for each fiscal period, using the treasury stock method. Under the treasury stock method, the amount the employee must pay for exercising stock options and purchasing shares under the ESPP and the amount of compensation cost for future service that we have not yet recognized are collectively assumed to be used to repurchase shares. The dilutive effect of convertible preferred stock and LP Units is calculated using the if-converted method. The if-converted method assumes that these securities were converted at the beginning of the reporting period to the extent that the effect is dilutive.

Reclassifications. Certain reclassifications have been made to the prior period consolidated balance sheet, statements of operations, statements of cash flows and statements of equity. These reclassifications have no impact on the previously reported total stockholders’ equity, net income or net cash activities.

Recently Adopted Accounting Guidance

In the first quarter of fiscal year 2019, we adopted the Financial Accounting Standards Board (“FASB”) guidance issued in March 2017 that requires an employer to present the service cost component of net periodic benefit cost in the same income statement line item as other employee compensation costs arising from services rendered during the period. Other components of the net periodic benefit cost are presented separately from the service cost component. We adopted the guidance using a permitted practical expedient that uses the amounts disclosed in the pension and other post-retirement benefit plans note for the prior comparative periods as the estimation basis for applying the retrospective presentation requirements. The adoption did not have a material impact on the consolidated statements of operations presented herein.

In the first quarter of fiscal year 2019, we adopted the guidance issued in January 2016 that changes the accounting for equity investments, financial liabilities under the fair value option, and the presentation and disclosure requirements for financial instruments. This guidance requires the remeasurement of equity investments not accounted for under the equity method to be measured at fair value and any changes in fair value recognized in net income. The guidance allows for election of a measurement alternative for equity securities without readily determinable fair values to be measured at cost less impairment, adjusted for observable price changes. We adopted this guidance using the modified retrospective method for our marketable equity securities and a prospective approach for non-marketable equity securities using the measurement alternative. Upon adoption, we recognized an $8 million increase to retained earnings and a $1 million increase to accumulated other comprehensive loss. During the fiscal year ended November 3, 2019, we also recognized $145 million of unrealized gains on equity securities within other income, net in our consolidated statements of operations.

In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers ("Topic 606"). We adopted Topic 606 effective November 5, 2018 using the modified retrospective method. Reporting periods prior to the adoption of the new revenue standard are presented in accordance with Accounting Standards Codification 605, Revenue Recognition ("Topic 605"), while reporting periods after adoption are presented in accordance with the new revenue standard. The cumulative effect adjustment as of November 5, 2018 to retained earnings was not significant.

Recent Accounting Guidance Not Yet Adopted

In February 2016, the FASB issued guidance related to the accounting for leases, which among other things, requires a lessee to recognize lease assets and lease liabilities on the balance sheet for operating leases. This guidance will be effective for the first quarter of our fiscal year ending November 1, 2020 ("fiscal year 2020"). We will adopt this guidance using the optional transition method and will not restate comparative prior periods. We are finalizing the implementation of related systems, policies, processes and internal controls to comply with this guidance. Based on our lease portfolio as of November 3, 2019, we expect the adoption of the new leasing guidance to result in recognition of operating right-of-use assets and corresponding liabilities on our consolidated balance sheet within a range of $500 million to $600 million, primarily related to real estate.

3. Revenue from Contracts with Customers

Disaggregation

We have considered (1) information that is regularly reviewed by our Chief Executive Officer, who has been identified as the Chief Operating Decision Maker (the "CODM") as defined by the authoritative guidance on segment reporting, in evaluating financial performance and (2) disclosures presented outside of our financial statements in our earnings releases and used in investor presentations to disaggregate revenues. The principal category we use to disaggregate revenues is the nature of our products and subscriptions and services, as presented in our consolidated statements of operations. In addition, revenues by reportable segment are presented in Note 12. "Segment Information".

The following table presents revenue disaggregated by type of revenue and by region:

	Fiscal Year Ended November 3, 2019			
	Americas	**Asia Pacific**	**Europe, the Middle East and Africa**	**Total**
		(In millions)		
Products	$ 2,023	$ 14,857	$ 1,237	$ 18,117
Subscriptions and services(a)	3,126	374	980	4,480
Total	$ 5,149	$ 15,231	$ 2,217	$ 22,597

(a) Subscriptions and services predominantly includes software licenses with termination for convenience clauses.

Although we recognize revenue for the majority of our products when title and control transfer in Penang, Malaysia, we disclose net revenue by region based on the geographic shipment or delivery location specified by distributors, OEMs, contract manufacturers, channel partners, or software customers.

Contract Balances

Contract assets and contract liabilities balances for the periods indicated below were as follows:

	Contract Assets		Contract Liabilities	
	(In millions)			
Opening balance November 5, 2018(a)	$	18	$	272
Closing balance November 3, 2019	$	259	$	1,808

(a) We adopted Topic 606 immediately prior to the CA Merger. Accordingly, the opening balance does not include contract assets or contract liabilities associated with CA.

Table of Contents

Changes in our contract assets and contract liabilities primarily result from the timing difference between our performance and the customer's payment. We fulfill our obligations under a contract with a customer by transferring products and services in exchange for consideration from the customer. We recognize a contract asset when we transfer products or services to a customer and the right to consideration is conditional on something other than the passage of time. Accounts receivable are recorded when the customer has been billed or the right to consideration is unconditional. We recognize contract liabilities when we have received consideration or an amount of consideration is due from the customer and we have a future obligation to transfer products or services. Contract liabilities include amounts billed or collected and advanced payments on contracts or arrangements which may include termination for convenience provisions. The amount of revenue recognized during the fiscal year ended November 3, 2019 that was included in the contract liabilities balance as of November 5, 2018 was $200 million.

Remaining Performance Obligations

Revenue allocated to remaining performance obligations represents the transaction price allocated to the performance obligations that are unsatisfied, or partially unsatisfied. It includes unearned revenue and amounts that will be invoiced and recognized as revenue in future periods and does not include CA contracts where the customer is not committed. The customer is not considered committed when termination for convenience without payment of a substantive penalty exists. This has been extended to all CA customers, either contractually or through customary business practice. Additionally, as a practical expedient, we have not included contracts that have an original duration of one year or less nor have we included contracts with sales-based and usage-based royalties promised in exchange for a license of intellectual property.

Because the substantial majority of our customer contracts allow our customers to terminate for convenience or have an original duration of one year or less, the total amount of the transaction price allocated to remaining performance obligations as of November 3, 2019 was not significant. Since our customers generally do not exercise their termination for convenience rights and the majority of the contracts we execute for products, as well as subscriptions and services, have a duration of one year or less, our remaining performance obligations are not indicative of revenue for future periods.

Contract Costs

We have applied the practical expedient to expense commission costs as incurred for costs to obtain a contract when the amortization period would have been one year or less. As a result, no commission costs are capitalized.

We recognize an asset for costs incurred to fulfill a contract that are not within the scope of other accounting literature. We have not incurred any such costs and, as a result, no costs to fulfill a contract have been capitalized.

Topic 606 Adoption

We applied Topic 606 using the modified retrospective method for all contracts not completed as of the date of adoption. For contracts that were modified before the effective date, we reflected the aggregate effect of all modifications when identifying the performance obligations and allocating the transaction price at transition, which did not have a material effect on the adjustment to retained earnings as of November 5, 2018.

We adopted Topic 606 immediately prior to the CA Merger. Accordingly, the adoption adjustments presented below excluded CA. As a result of applying the modified retrospective method, the following adjustments were made to selected consolidated balance sheet line items as of November 5, 2018:

Balance Sheet	Ending Balance as	Opening Balance as of

	of November 4, 2018	Adjustments Due to Topic 606	November 5, 2018
		(In millions)	
ASSETS			
Trade accounts receivable, net	$ 3,325	$ 11	$ 3,336
Other current assets	$ 366	$ 10	$ 376
Other long-term assets	$ 707	$ 20	$ 727
LIABILITIES			
Other current liabilities	$ 812	$ 35	$ 847
Other long-term liabilities	$ 3,636	$ 6	$ 3,642

Table of Contents

Impact of New Revenue Guidance on Net Revenue

The following table compares net revenue for the period presented to the pro forma amounts had the previous guidance been in effect. No other amounts in the consolidated statements of operations for the fiscal year ended November 3, 2019 or in the consolidated balance sheet as of November 3, 2019 were significantly affected by the new revenue guidance.

	Fiscal Year Ended November 3, 2019		
Statement of Operations	**Pro forma as if the previous accounting was in effect**	**Effect of Change**	**As Reported**
		(In millions)	
Net revenue:			
Products	$ 18,117	$ —	$ 18,117
Subscriptions and services	4,257	223	4,480
Total net revenue	$ 22,374	$ 223	$ 22,597

4. Acquisitions

Acquisition of CA, Inc.

On November 5, 2018, we acquired CA, which was a leading provider of information technology management software and solutions. We acquired CA to enhance our infrastructure software capabilities. We financed the CA Merger with the net proceeds from borrowings under the Original 2019 Term Loans, as defined in Note 9. "Borrowings," as well as with cash on hand of the combined companies.

Purchase Consideration

	(In millions)
Cash paid for outstanding CA common stock	$ 18,402
Cash paid by Broadcom to retire CA's term loan	274
Cash paid for vested CA equity awards	101
Fair value of partially vested assumed equity awards	67
Total purchase consideration	18,844
Less: cash acquired	2,750
Total purchase consideration, net of cash acquired	$ 16,094

All vested in-the-money CA stock options, after giving effect to any acceleration, and all outstanding deferred stock units were cashed out upon the completion of the CA Merger. We assumed all unvested CA equity awards held by continuing employees. The portion of the fair value of partially vested equity awards associated with prior service of CA employees represents a component of the total consideration as presented above and was valued based on our share price as of the CA Acquisition Date. The following table presents our allocation of the total purchase price, net of cash acquired:

	Fair Value
	(In millions)
Current assets	$ 1,665

Goodwill	9,796
Intangible assets	12,045
Other long-term assets	240
Total assets acquired	23,746
Current liabilities	(1,966)
Long-term debt	(2,255)
Other long-term liabilities	(3,431)
Total liabilities assumed	(7,652)
Fair value of net assets acquired	$ 16,094

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the CA business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved as a result of the CA Merger. Goodwill is not deductible for tax purposes.

Current assets included assets held-for-sale related to CA's Veracode business, which was not aligned with our strategic objectives. On December 31, 2018, we sold this business to Thoma Bravo, LLC for cash consideration of $950 million, before working capital adjustments. We do not have any material continuing involvement with this business and have presented its results in discontinued operations. Current assets also included $80 million of real properties held-for-sale. During fiscal year 2019, we sold a portion of these real properties for $62 million and recognized a loss of $8 million.

Our results of continuing operations for fiscal year 2019 included $3,377 million of net revenue attributable to CA. It was impracticable to determine the effect on net income attributable to CA as we had integrated a substantial portion of CA into our ongoing operations during the year. The results of operations of CA were included in our infrastructure software segment. Transaction costs related to the CA Merger of $73 million were included in selling, general and administrative expense for fiscal year 2019.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 4,957	6
Customer contracts and related relationships	4,190	6
Order backlog	2,569	3
Trade name and other	137	5
Total identified finite-lived intangible assets	11,853	
IPR&D	192	N/A
Total identified intangible assets	$ 12,045	

Developed technology relates to products used for mission critical business tools for processes and applications, as well as products used for cloud-based planning, development, management and security tools. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of CA. Customer contracts and related relationships were valued using the with-and-without-method under the income approach. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. The economic useful life was determined by evaluating many factors, including the useful life of other intangible assets, the length of time remaining on the acquired contracts and the historical customer turnover rates.

Order backlog represents business under existing contractual obligations. The fair value of backlog was determined using the multi-period excess earnings method under the income approach based on expected operating cash flows from future contractual revenue. The economic useful life was determined based on the expected life of the backlog and the cash flows over the forecast period.

Trade name relates to the “CA” trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

The fair value of IPR&D was determined using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the IPR&D, less charges representing the contribution of other assets to those cash flows.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the CA Acquisition Date.

Table of Contents

The following table summarizes the details of IPR&D by category as of the CA Acquisition Date:

Description	IPR&D	Percentage of Completion	Estimated Cost to Complete	Expected Completion Date (By Fiscal Year)
		(Dollars in millions)		
Mainframe	$ 178	67 %	$ 138	2019
Enterprise Solutions	$ 14	63 %	$ 12	2019

Discount rates of 12% and 14% were applied to the projected cash flows to reflect the risk related to these mainframe and enterprise solutions IPR&D projects, respectively.

As of November 3, 2019, these IPR&D projects are expected to be fully placed in service during the first half of fiscal year 2020.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for each of the periods presented, as if CA had been acquired as of the beginning of fiscal year 2018. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to stock-based compensation expense, interest expense for the additional indebtedness incurred to complete the acquisition, restructuring charges related to the acquisition and transaction costs. For fiscal year 2018, non-recurring pro forma adjustments directly attributable to the CA Merger included transaction costs of $180 million. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2018 or of the results of our future operations of the combined business.

	Fiscal Year	
	2019	2018
	(In millions)	
Pro forma net revenue*	$ 21,697	$ 24,451
Pro forma net income attributable to common stock	$ 2,535	$ 9,783

***** Pro forma net revenue was presented under Topic 606 for fiscal year 2019 and under Topic 605 for fiscal year 2018.

Acquisition of Brocade

On November 17, 2017 (the "Brocade Acquisition Date"), we acquired Brocade (the "Brocade Merger"). Brocade was a supplier of networking hardware, software and services, including Fibre Channel Storage Area Network ("FC SAN") solutions and Internet Protocol Networking ("IP Networking") solutions. We acquired Brocade to enhance our position as a provider of enterprise storage connectivity solutions, broaden our portfolio for enterprise storage, and to increase our ability to address the evolving needs of our original equipment manufacturer ("OEM") customers. We financed the Brocade Merger with a portion of the net proceeds from the issuance of the 2017 Senior Notes, as defined in Note 15. "Condensed Consolidating Financial Information," as well as with cash on hand.

Purchase Consideration

		(In millions)
Cash paid for outstanding Brocade common stock	$	5,298
Cash paid by Broadcom to retire Brocade’s term loan		701
Cash paid for Brocade equity awards		31
Fair value of partially vested assumed equity awards		8
Total purchase consideration		6,038
Less: cash acquired		1,250
Total purchase consideration, net of cash acquired	$	4,788

We assumed all unvested Brocade stock options, RSUs and performance stock units ("PSUs") held by continuing employees. The portion of the fair value of partially vested equity awards associated with prior service of Brocade employees represents a component of the total consideration as presented above. All vested in-the-money Brocade stock options, after giving effect to any acceleration, were cashed out upon the completion of the Brocade Merger. RSUs and PSUs were valued based on our share price as of the Brocade Acquisition Date.

The following table presents our allocation of the total purchase price, net of cash acquired:

	Fair Value
	(In millions)
Current assets	$ 1,297
Goodwill	2,187
Intangible assets	3,396
Other long-term assets	82
Total assets acquired	6,962
Current portion of long-term debt	(856)
Other current liabilities	(374)
Long-term debt	(38)
Other long-term liabilities	(906)
Total liabilities assumed	(2,174)
Fair value of net assets acquired	$ 4,788

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the Brocade business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved as a result of the Brocade Merger. Goodwill is not deductible for tax purposes.

Current assets included assets held-for-sale related to Brocade's IP Networking business, which was not aligned with our strategic objectives. On December 1, 2017, we sold this business to ARRIS International plc ("ARRIS") for cash consideration of $800 million, before contractual working capital adjustments. In connection with this sale, we indemnified ARRIS for $116 million of potential income tax liabilities. We provided transitional services as short-term assistance to ARRIS in assuming the operations of the purchased business. We do not have any material continuing involvement with this business and have presented its results in discontinued operations.

Current assets also included assets held-for-sale for Brocade's headquarters, which was sold for $224 million during fiscal year 2018, for no gain or loss.

Our results of continuing operations for fiscal year 2018 included $1,780 million of net revenue attributable to Brocade. It was impracticable to determine the effect on net income attributable to Brocade as we had integrated a substantial portion of Brocade into our ongoing operations. The results of operations of Brocade were primarily included in our infrastructure software segment. Transaction costs of $29 million related to the Brocade Merger were included in selling, general and administrative expense for fiscal year 2018.

Intangible Assets

	Fair Value	Weighted-Average

	(In millions)	Amortization Periods (In years)
Developed technology	$ 2,925	10
Customer contracts and related relationships	255	11
Trade name and other	61	6
Total identified finite-lived intangible assets	3,241	
IPR&D	155	N/A
Total identified intangible assets	$ 3,396	

Developed technology relates to products for FC SAN applications. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of Brocade. Customer contracts and related relationships were valued using the distributor method and the with-and-without-method under the income approach. The distributor method determines the fair value by measuring the economic profits generated by an intermediary, which in our case represented OEM customers. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. In both instances, the economic useful life was determined based on historical customer turnover rates.

Trade name relates to the “Brocade” trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

The fair value of IPR&D was determined using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the IPR&D, less charges representing the contribution of other assets to those cash flows.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the Brocade Acquisition Date.

The following table summarizes the details of IPR&D by category at the Brocade Acquisition Date:

Description	**IPR&D**	**Percentage of Completion**	**Estimated Cost to Complete**	**Expected Completion Date (By Fiscal Year)**
		(Dollars in millions)		
Directors	$ 64	72 %	$ 45	2019
Switches	$ 50	81 %	$ 21	2018
Embedded	$ 31	74 %	$ 22	2019
Networking software	$ 10	73 %	$ 27	2018

A discount rate of 11% was applied to the projected cash flows to reflect the risk related to these IPR&D projects. The discount rate represented a premium of 1% over the weighted-average cost of capital to reflect the higher risk and uncertainty of the cash flows for IPR&D relative to the overall businesses.

As of November 3, 2019, these IPR&D projects were substantially complete and placed in service.

Table of Contents

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for each of the periods presented, as if Brocade had been acquired as of the beginning of fiscal year 2017. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to stock-based compensation expense, the purchase accounting effect on inventory acquired, restructuring charges related to the acquisition and transaction costs. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2017 or of the results of our future operations of the combined business.

	Fiscal Year	
	2018	**2017**
	(In millions)	
Pro forma net revenue*	$ 20,978	$ 19,441
Pro forma net income attributable to common stock	$ 12,408	$ 986

* Pro forma net revenue was presented under Topic 605 for fiscal years 2018 and 2017.

5. Supplemental Financial Information

Cash Equivalents

Cash equivalents included $850 million and $1,406 million of time deposits as of November 3, 2019 and November 4, 2018, respectively. As of November 3, 2019 and November 4, 2018, cash equivalents also included $649 million and $202 million, respectively, of money-market funds. For time deposits, carrying value approximates fair value due to the short-term nature of the instruments. The fair value of money-market funds, which was consistent with their carrying value, was determined using unadjusted prices in active, accessible markets for identical assets, and as such they were classified as Level 1 assets in the fair value hierarchy.

Accounts Receivable Factoring

We sell certain of our trade accounts receivable on a non-recourse basis to third-party financial institutions pursuant to factoring agreements. We account for these transactions as sales of receivables and present cash proceeds as cash provided by operating activities in the consolidated statements of cash flows. Total trade accounts receivable sold under the factoring agreements were $1,151 million and $362 million during fiscal years 2019 and 2018, respectively. Factoring fees for the sales of receivables were recorded in other income, net and were not material for any period presented.

Inventory

	November 3, 2019	November 4, 2018
	(In millions)	
Finished goods	$ 339	$ 483
Work-in-process	414	505
Raw materials	121	136
Total inventory	$ 874	$ 1,124

Property, Plant and Equipment, Net

	November 3, 2019	November 4, 2018
	(In millions)	
Land	$ 189	$ 189
Construction in progress	85	67
Buildings and leasehold improvements	1,078	1,016
Machinery and equipment	3,544	3,257
Total property, plant and equipment	4,896	4,529
Accumulated depreciation and amortization	(2,331)	(1,894)
Total property, plant and equipment, net	$ 2,565	$ 2,635

Depreciation expense was $569 million, $515 million and $451 million for fiscal years 2019, 2018 and 2017, respectively.

As of November 3, 2019 and November 4, 2018, we had $35 million and $22 million, respectively, of unpaid purchases of property, plant and equipment included in accounts payable and other current liabilities. Amounts reported as unpaid purchases are presented as cash outflows from investing activities for purchases of property, plant and equipment in the consolidated statements of cash flows in the period in which they are paid.

Other Current Assets

	November 3, 2019	November 4, 2018
	(In millions)	
Prepaid expenses	$ 302	$ 243
Other (miscellaneous)	427	123
Total other current assets	$ 729	$ 366

Other Current Liabilities

	November 3, 2019	November 4, 2018
	(In millions)	
Contract liabilities	$ 1,501	$ 164
Tax liabilities	229	162
Interest payable	214	165
Accrued rebates	95	161
Other (miscellaneous)	577	160
Total other current liabilities	$ 2,616	$ 812

Other Long-Term Liabilities

	November 3, 2019	November 4, 2018
	(In millions)	
Unrecognized tax benefits (a) (b)	$ 3,269	$ 3,088

Tax indemnification liability	116	116
Other (miscellaneous)	2,228	432
Total other long-term liabilities	$ 5,613	$ 3,636

(a) Refer to Note 11. “Income Taxes” for additional information regarding these balances.

(b) Includes accrued interest and penalties.

Other Income, Net

	Fiscal Year		
	2019	2018	2017
	(In millions)		
Gain (loss) on investment	$ 145	$ 3	$ (1)
Interest income	98	114	44
Other income	18	27	55
Other expense	(35)	—	(24)
Other income, net	$ 226	$ 144	$ 74

Other income includes gains (losses) on foreign currency remeasurement and other miscellaneous items.

6. Goodwill and Intangible Assets

Goodwill

	Wired Infrastructure	Wireless Communications	Enterprise Storage	Industrial & Other	Semiconductor Solutions	Infrastructure Software	IP Licensing	Total
	(In millions)							
Balance as of October 29, 2017	$ 17,622	$ 5,945	$ 995	$ 144	$ —	$ —	$ —	$ 24,706
Acquisitions	83	—	2,117	7	—	—	—	2,207
Balance as of November 4, 2018	17,705	5,945	3,112	151	—	—	—	26,913
Reallocation due to change in segments	(17,705)	(5,945)	(3,112)	(151)	25,924	980	9	—
Acquisitions	—	—	—	—	5	9,796	—	9,801
Balance as of November 3, 2019	$ —	$ —	$ —	$ —	$ 25,929	$ 10,776	$ 9	$ 36,714

During the first quarter of fiscal year 2019, we changed our organizational structure resulting in three reportable segments: semiconductor solutions, infrastructure software and IP licensing. As a result, we have reassigned the goodwill balance to reflect our new segment structure using a relative fair value allocation approach. Under this approach, the fair value of each segment was determined using a combination of the income approach and the market approach, and was compared to the fair value of the total business immediately prior to the reorganization to arrive at the reassigned goodwill balance.

During the fourth quarter of fiscal years 2019, 2018 and 2017, we completed our annual impairment assessments and concluded that goodwill was not impaired in any of these years.

Table of Contents

Intangible Assets

	Gross Carrying Amount	Accumulated Amortization	Net Book Value
		(In millions)	
As of November 3, 2019:			
Purchased technology	$ 20,935	$ (10,113)	$ 10,822
Customer contracts and related relationships	5,978	(1,787)	4,191
Order backlog	2,569	(908)	1,661
Trade names	712	(247)	465
Other	241	(89)	152
Intangible assets subject to amortization	30,435	(13,144)	17,291
IPR&D	263	—	263
Total	$ 30,698	$ (13,144)	$ 17,554
As of November 4, 2018:			
Purchased technology	$ 15,806	$ (6,816)	$ 8,990
Customer contracts and related relationships	1,792	(878)	914
Trade names	578	(170)	408
Other	239	(53)	186
Intangible assets subject to amortization	18,415	(7,917)	10,498
IPR&D	264	—	264
Total	$ 18,679	$ (7,917)	$ 10,762

Based on the amount of intangible assets subject to amortization at November 3, 2019, the expected amortization expense for each of the next five fiscal years and thereafter was as follows:

Fiscal Year:	Expected Amortization Expense
	(In millions)
2020	$ 5,054
2021	4,151
2022	3,180
2023	2,172
2024	1,490
Thereafter	1,244
Total	$ 17,291

The weighted-average amortization periods remaining by intangible asset category were as follows:

Amortizable intangible assets:	November 3, 2019	November 4, 2018

	(In years)	
Purchased technology	5	6
Customer contracts and related relationships	5	5
Order backlog	3	N/A
Trade names	10	12
Other	10	10

Table of Contents

7. Net Income Per Share

	Fiscal Year		
	2019	2018	2017
	(In millions, except per share data)		
Numerator:			
Income from continuing operations	$ 2,736	$ 12,629	$ 1,790
Less: Dividends on preferred stock	29	—	—
Income from continuing operations attributable to noncontrolling interest	—	352	92
Income from continuing operations attributable to common stock	2,707	12,277	1,698
Loss from discontinued operations, net of income taxes	(12)	(19)	(6)
Less: Loss from discontinued operations, net of income taxes, attributable to noncontrolling interest	—	(1)	—
Loss from discontinued operations, net of income taxes, attributable to common stock	(12)	(18)	(6)
Net income attributable to common stock	$ 2,695	$ 12,259	$ 1,692
Denominator:			
Weighted-average shares outstanding - basic	398	418	405
Dilutive effect of equity awards	21	13	16
Weighted-average shares outstanding - diluted	419	431	421
Basic income per share attributable to common stock:			
Income per share from continuing operations	$ 6.80	$ 29.37	$ 4.19
Loss per share from discontinued operations	(0.03)	(0.04)	(0.01)
Net income per share	$ 6.77	$ 29.33	$ 4.18
Diluted income per share attributable to common stock:			
Income per share from continuing operations	$ 6.46	$ 28.48	$ 4.03
Loss per share from discontinued operations	(0.03)	(0.04)	(0.01)
Net income per share	$ 6.43	$ 28.44	$ 4.02
Potentially dilutive shares excluded from the calculation of diluted income per share because their effect would have been antidilutive:			
Preferred Stock (a)	1	—	—
LP Units (b)	—	9	22

(a) Represents common stock shares issuable upon the conversion of Mandatory Convertible Preferred Stock, as defined in Note 10. "Stockholders' Equity."

(b) Represents common stock shares issuable upon the exchange of LP Units prior to the effective time of the Mandatory Exchange (refer to Note 10. "Stockholders' Equity" for additional information).

8. Retirement Plans and Post-Retirement Benefits

Pension and Post-Retirement Benefit Plans

Defined Benefit Plans. The U.S. defined benefit pension plans include a management plan and a represented plan. Benefits under the management plan are provided under either an adjusted career-average-pay program or a cash-balance program. Benefits under the represented plan are based on a dollar-per-month formula. Benefit accruals under the management plan were frozen in 2009. Participants in the adjusted career-average-pay program no longer earn service accruals. Participants in the cash-balance program no longer earn service accruals, but continue to earn 4% interest per year on their cash-balance accounts. There are no active participants under the represented plan. We also have a non-qualified supplemental pension plan in the United States that principally provides benefits based on compensation in excess of amounts that can be considered under the management plan. Effective December 31, 2018, the represented plan was merged into the management plan. The plan merger did not impact any of the respective plan provisions for either management or represented plan participants. We also have pension plans covering certain non-U.S. employees.

Post-Retirement Benefit Plans. Certain of our U.S. employees who meet the retirement eligibility requirements as of their termination dates, may receive post-retirement medical benefits under our retiree medical account program. Eligible employees receive a medical benefit spending account of $55,000 upon retirement to pay premiums for medical coverage through the maximum age of 75 as retiree.

Our group life insurance plan offers post-retirement life insurance coverage for certain U.S. employees.

Non-U.S Retirement Benefit Plans. We have defined benefit plans for certain employees in Austria, France, Germany, India, Israel, Italy, Japan and Taiwan. Eligibility is generally determined based on the terms of our plans and local statutory requirements.

Net Periodic Benefit (Income) Cost

	Pension Benefits			Post-Retirement Benefits		
	Fiscal Year			Fiscal Year		
	2019	2018	2017	2019	2018	2017
	(In millions)					
Service cost	$ 10	$ 4	$ 4	$ —	$ —	$ —
Interest cost	58	51	53	3	3	3
Expected return on plan assets	(59)	(51)	(65)	(3)	(4)	(4)
Other	1	1	1	(1)	—	—
Net periodic benefit (income) cost	$ 10	$ 5	$ (7)	$ (1)	$ (1)	$ (1)
Net actuarial (gain) loss	$ 13	$ 14	$ (60)	$ 11	$ (3)	$ (3)

The components of net periodic benefit (income) costs other than the service cost are included in other income, net in our consolidated statements of operations.

Table of Contents

Funded Status

	Pension Benefits		Post-Retirement Benefits	
	November 3, 2019	November 4, 2018	November 3, 2019	November 4, 2018
	(In millions)			
Change in plan assets:				
Fair value of plan assets — beginning of period	$ 1,394	$ 1,426	$ 81	$ 83
Actual return on plan assets	232	(65)	6	—
Employer contributions	15	130	1	—
Payments from plan assets	(94)	(93)	(3)	(2)
Foreign currency impact	(8)	(4)	—	—
Fair value of plan assets — end of period	1,539	1,394	85	81
Change in benefit obligations:				
Benefit obligations — beginning of period	1,364	1,508	74	80
Service cost	10	4	—	—
Interest cost	58	51	3	3
Actuarial (gain) loss	186	(102)	14	(7)
Benefit payments	(94)	(93)	(3)	(2)
Plan amendment	—	3	—	—
Benefit obligations assumed in an acquisition	37	—	5	—
Foreign currency impact	(8)	(7)	—	—
Benefit obligations — end of period	1,553	1,364	93	74
Overfunded (underfunded) status of benefit obligations (a)	$ (14)	$ 30	$ (8)	$ 7
Actuarial losses and prior service costs recognized in accumulated other comprehensive loss, net of taxes	$ (125)	$ (110)	$ (15)	$ (5)

(a) Substantially all amounts recognized in the consolidated balance sheets were recorded in other long-term assets and other long-term liabilities for all periods presented.

Plans with benefit obligations in excess of plan assets:

	Pension Benefits		Post-Retirement Benefits	
	November 3, 2019	November 4, 2018	November 3, 2019	November 4, 2018
	(In millions)			
Projected benefit obligations	$ 92	$ 551	$ —	$ —
Accumulated benefit obligations	$ 80	$ 546	$ 16	$ 14
Fair value of plan assets	$ 32	$ 528	$ —	$ —

Table of Contents

Plans with benefit obligations less than plan assets:

	Pension Benefits		Post-Retirement Benefits	
	November 3, 2019	November 4, 2018	November 3, 2019	November 4, 2018
	(In millions)			
Projected benefit obligations	$ 1,461	$ 813	$ —	$ —
Accumulated benefit obligations	$ 1,460	$ 812	$ 77	$ 60
Fair value of plan assets	$ 1,507	$ 866	$ 85	$ 81

The fair value of pension plan assets at November 3, 2019 and November 4, 2018 included $151 million and $147 million, respectively, of assets for our non-U.S. pension plans.

The projected benefit obligations as of November 3, 2019 and November 4, 2018 included $184 million and $129 million, respectively, of obligations related to our non-U.S. plans. The accumulated benefit obligations as of November 3, 2019 and November 4, 2018 included $171 million and $122 million, respectively, of obligations related to our non-U.S. plans.

Expected Future Benefit Payments

Fiscal Years:	Pension Benefits	Post-Retirement Benefits
	(In millions)	
2020	$ 93	$ 6
2021	$ 92	$ 4
2022	$ 92	$ 4
2023	$ 92	$ 4
2024	$ 93	$ 4
2025-2029	$ 449	$ 23

Defined Benefit Plan Investment Policy

Plan assets of the funded defined benefit pension plans are invested in funds held by third-party fund managers or are deposited into government-managed accounts in which we have no active involvement in and no control over investment strategy, other than establishing broad investment guidelines and parameters.

Our plan’s investment committee has set the investment strategy to fully match the liability. We direct the overall portfolio allocation and use a third-party investment consultant that has discretion to structure portfolios and select the investment managers within those allocation parameters. Multiple investment managers are utilized, including both active and passive management approaches. The plan assets are invested using the liability-driven investment strategy intended to minimize market and interest rate risks, and those assets are periodically rebalanced toward asset allocation targets.

The target asset allocation for U.S. plans reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plans. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. For both fiscal years 2019 and 2018, 100% of U. S. plan assets were allocated to fixed income, in line with the target allocation. The fixed income allocation is primarily directed toward long-term core bond investments, with smaller allocations to Treasury Inflation-Protected Securities and high-yield bonds.

Table of Contents

Fair Value Measurement of Plan Assets

	November 3, 2019			
	Fair Value Measurements at Reporting Date Using			
	Level 1	Level 2	Level 3	Total
	(In millions)			
Cash equivalents	$ 34 (a)	$ —	$ —	$ 34
Equity securities:				
Non-U.S. equity securities	21 (b)	—	—	21
Fixed-income securities:				
U.S. treasuries	—	82 (c)	—	82
Corporate bonds	—	1,372 (c)	—	1,372
Municipal bonds	—	19 (c)	—	19
Government bonds	—	10 (c)	—	10
Asset-backed securities	—	1 (c)	—	1
Total plan assets	$ 55	$ 1,484	$ —	$ 1,539

	November 4, 2018			
	Fair Value Measurements at Reporting Date Using			
	Level 1	Level 2	Level 3	Total
	(In millions)			
Cash equivalents	$ 36 (a)	$ —	$ —	$ 36
Equity securities:				
Non-U.S. equity securities	19 (b)	—	—	19
Fixed-income securities:				
U.S. treasuries	—	80 (c)	—	80
Corporate bonds	—	1,229 (c)	—	1,229
Municipal bonds	—	17 (c)	—	17
Government bonds	—	13 (c)	—	13
Total plan assets	$ 55	$ 1,339	$ —	$ 1,394

(a) Cash equivalents primarily included short-term investment funds which consisted of short-term money market instruments that were valued based on quoted prices in active markets.

(b) These equity securities were valued based on quoted prices in active markets.

(c) These amounts consisted of investments that were traded less frequently than Level 1 securities and were valued using inputs that included quoted prices for similar assets in active markets and inputs other than quoted prices that were observable for the asset, such as interest rates, yield curves, prepayment speeds, collateral performance, broker/dealer quotes and indices that were observable at commonly quoted intervals.

Post-Retirement Benefit Plan Investment Policy

Our overall investment strategy for the group life insurance plan is to allocate assets in a manner that seeks to both maximize the safety of promised benefits and minimize the cost of funding those benefits. The target asset allocation for plan assets reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plan. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. We set the overall portfolio allocation and use an investment manager that directs the investment of funds consistent with that allocation. The investment manager invests the plan assets in index funds that it manages. For both fiscal years 2019 and 2018, 100% of plan assets were allocated to commingled funds that invested in fixed income, in line with the target allocation.

Table of Contents

Assumptions

The assumptions used to determine the benefit obligations and net periodic benefit (income) cost from our defined benefit and post-retirement benefit plans are presented in the table below. The expected long-term return on assets shown in the table below represents an estimate of long-term returns on investment portfolios primarily consisting of combinations of debt, equity and other investments, depending on the plan. The long-term rates of return are then weighted based on the asset classes (both historical and forecasted) in which we expect the pension and post-retirement funds to be invested. Discount rates reflect the current rate at which defined benefit and post-retirement benefit obligations could be settled based on the measurement dates of the plans, which in each case is our fiscal year end. The range of assumptions that are used for defined benefit pension plans reflects the different economic environments within various countries.

	Assumptions for Benefit Obligations as of		**Assumptions for Net Periodic Benefit (Income) Cost Fiscal Year**		
	November 3, 2019	**November 4, 2018**	**2019**	**2018**	**2017**
Defined benefit pension plans:					
Discount rate	0.47%-7.00%	0.50%-8.00%	0.50%-8.00%	0.50%-7.00%	0.50%-7.00%
Average increase in compensation levels	2.00%-10.00%	2.00%-10.00%	1.80%-10.00%	2.00%-11.00%	2.00%-9.15%
Expected long-term return on assets	N/A	N/A	1.50%-7.75%	1.50%-7.50%	0.25%-8.00%

	Assumptions for Benefit Obligations as of		**Assumptions for Net Periodic Benefit (Income) Cost Fiscal Year**		
	November 3, 2019	**November 4, 2018**	**2019**	**2018**	**2017**
Post-retirement benefits plans:					
Discount rate	2.80%-3.20%	4.30%-4.60%	4.12%-4.60%	3.40%-3.80%	3.30%-3.90%
Average increase in compensation levels	3.00%	3.00%	3.00%	3.00%	3.50%
Expected long-term return on assets	N/A	N/A	4.80%	4.80%	4.40%

	Assumed Health Care Cost Trend Rate Used to Measure the Expected Cost of Benefits as of

	November 3, 2019	November 4, 2018
Health care cost trend rate assumed for next year	4.50%-7.40%	6.70%
Rate to which the health care cost trend rate is assumed to decline (ultimate health care cost trend rate)	3.50%-4.50%	3.50%
Year that the rate reaches the ultimate health care cost trend rate	2031	2031

A one percentage point increase or decrease in the assumed health care cost trend rates would not have had a material effect on the accumulated post-retirement benefit obligations or service and interest cost components of the net periodic benefit cost for any periods presented.

Defined Contribution Plans

Our eligible U.S. employees participate in company-sponsored 401(k) plans. Under these plans, we provide matching contributions to employees up to 6% of their eligible earnings. All matching contributions vest immediately. During fiscal years 2019, 2018 and 2017, we made contributions of $89 million, $73 million and $61 million, respectively, to the 401(k) plans.

In addition, other eligible employees outside of the U.S. receive retirement benefits under various defined contribution retirement plans.

Table of Contents

9. Borrowings

	Effective Interest Rate	November 3, 2019	November 4, 2018
		(In millions)	
2019 Senior Notes - fixed rate			
3.125% notes due April 2021	3.607 %	$ 2,000	$ —
3.125% notes due October 2022	3.527 %	1,500	—
3.625% notes due October 2024	3.980 %	2,000	—
4.250% notes due April 2026	4.544 %	2,500	—
4.750% notes due April 2029	4.953 %	3,000	—
		11,000	—
2019 Term Loans - floating rate			
LIBOR plus 1.250% term loan due through May 2024	3.362 %	800	—
LIBOR plus 1.375% term loan due through May 2026	3.452 %	800	—
		1,600	—
2017 Senior Notes - fixed rate			
2.375% notes due January 2020	2.615 %	2,750	2,750
2.200% notes due January 2021	2.406 %	750	750
3.000% notes due January 2022	3.214 %	3,500	3,500
2.650% notes due January 2023	2.781 %	1,000	1,000
3.625% notes due January 2024	3.744 %	2,500	2,500
3.125% notes due January 2025	3.234 %	1,000	1,000
3.875% notes due January 2027	4.018 %	4,800	4,800
3.500% notes due January 2028	3.596 %	1,250	1,250
		17,550	17,550
Assumed CA Senior Notes - fixed rate			
5.375% notes due December 2019	3.433 %	750	—
3.600% notes due August 2022	4.071 %	500	—
4.500% notes due August 2023	4.099 %	250	—
4.700% notes due March 2027	5.153 %	350	—
		1,850	—
Commercial Paper			
Commercial paper	2.547 % (a)	1,000	—
		1,000	—
Assumed Brocade Convertible Notes - fixed rate			
1.375% convertible notes due January 2020	0.628 %	37	37
		37	37
Assumed BRCM Senior Notes - fixed rate			
2.500% - 4.500% notes due August 2022 - August 2034	2.585% - 4.546%	22	22
Total principal amount outstanding		33,059	17,609

Less: Unaccreted discount/premium and unamortized debt issuance costs	(261)	(116)
Total debt	$ 32,798	$ 17,493

(a) Represents the weighted average interest rate on outstanding commercial paper as of November 3, 2019.

2019 Senior Notes

In April 2019, we issued $11 billion in aggregate principal amount of senior unsecured notes (“2019 Senior Notes”). The 2019 Senior Notes are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by Broadcom Corporation (“BRCM”) and Broadcom Technologies Inc. (“BTI”). Each series of our 2019 Senior Notes pays interest semi-annually in arrears on April 15 and October 15 of each year. We may, at our option, redeem or purchase, in whole or in part, any of the 2019 Senior Notes at a price equal to 100% of the principal amount of the applicable 2019 Senior Notes, plus a corresponding make-whole premium as set forth in the indenture governing the 2019 Senior Notes, plus accrued and unpaid interest, if any, to the date of repurchase. The 2019 Senior Notes are recorded as long-term debt, net of discount. The discount associated with the 2019 Senior Notes is amortized to interest expense over the respective terms of these borrowings.

2019 Term Loans

On November 5, 2018, in connection with the CA Merger, we entered into a credit agreement (the “Original 2019 Credit Agreement”), which provided for a $9 billion unsecured term A-3 facility and a $9 billion unsecured term A-5 facility, collectively referred to as the “Original 2019 Term Loans”. Interest on our Original 2019 Term Loans was based on a floating rate and was payable monthly. Our obligations under the Original 2019 Credit Agreement were guaranteed on an unsecured basis by BRCM, Broadcom Cayman Finance Limited (“Cayman Finance”) and BTI. The Original 2019 Credit Agreement also provided for a five-year $5 billion unsecured revolving credit facility. In April 2019, we used the net proceeds of $11 billion from the 2019 Senior Notes and net proceeds of $1 billion from Commercial Paper (defined below) to reduce the outstanding amount of our Original 2019 Term Loans from $18 billion to $6 billion. As a result of repaying the Original 2019 Term Loans, we wrote off $26 million of debt issuance costs, which were included in interest expense in the consolidated statements of operations. The remaining unamortized discount and debt issuance costs balance on the Original 2019 Term Loans will be amortized to interest expense over the respective terms of the 2019 Senior Notes and Commercial Paper.

In May 2019, we entered into a new credit agreement (the “2019 Credit Agreement”), which provides for a $2 billion unsecured term A-3 facility, a $2 billion unsecured term A-5 facility and a $2 billion unsecured term A-7 facility, collectively referred to as the “2019 Term Loans”. The 2019 Credit Agreement has substantially the same terms and conditions as the Original 2019 Credit Agreement, except for the maturity dates of the facilities. The 2019 Term Loans replaced the remaining $6 billion Original 2019 Term Loans, which were terminated in connection with, and as a condition to, entering into the 2019 Credit Agreement. Our obligations under the 2019 Credit Agreement are guaranteed on an unsecured basis by BRCM, Cayman Finance and BTI.

In October 2019, we fully repaid our unsecured term A-3 facility of $2 billion and repaid $1.2 billion of each of our unsecured term A-5 and A-7 facilities under the 2019 Credit Agreement, using net proceeds from our Mandatory Convertible Preferred Stock offering as defined in Note 10. “Stockholders’ Equity,” as well as with cash on hand. As a result, we wrote off $22 million of debt issuance costs and unamortized discounts, which were included in interest expense in the consolidated statements of operations.

Revolving Facility

The 2019 Credit Agreement also provided for a five-year $5 billion unsecured revolving credit facility (the “Revolving Facility”), of which $500 million was available for the issuance of multi-currency letters of credit. The Revolving Facility replaced the revolving credit facility of the same amount under the Original 2019 Credit Agreement. The issuance of letters of credit and certain other instruments would reduce the aggregate amount otherwise available under the Revolving Facility for revolving loans. Subject to the terms of the 2019 Credit Agreement, we are permitted to borrow, repay and reborrow revolving loans at any time prior to the earlier of (a) November 2023 or (b) the date of termination in whole of the revolving lenders' commitments under the 2019 Credit Agreement in accordance with the terms thereof. We had no borrowings outstanding under the Revolving Facility on November 3, 2019.

Commercial Paper

In February 2019, we established a commercial paper program pursuant to which we may issue unsecured commercial paper notes ("Commercial Paper") in an aggregate principal amount of up to $2 billion outstanding at any time with maturities of up to 397 days from the date of issue. Commercial Paper is sold under customary terms in the commercial paper market and may be issued at a discount from par or, alternatively, may be sold at par and bear interest at rates dictated by market conditions at the time of their issuance. The Revolving Facility supports our commercial paper program. Outstanding Commercial Paper borrowings reduce the amount that would otherwise be available to borrow for general corporate purposes under the Revolving Facility. As of November 3, 2019, we had $1 billion of Commercial Paper outstanding with maturities generally less than sixty days. We intend to continuously replace our Commercial Paper upon maturity with newly issued commercial paper. In addition, we have the ability to finance the Commercial Paper borrowings on a long-term basis as they are supported by the Revolving Facility. We have recorded Commercial Paper, net of discount, as long-term debt. The discount associated with the Commercial Paper is amortized to interest expense over its term.

2017 Senior Notes

During fiscal year 2017, BRCM and Broadcom Cayman Finance Limited, or together with BRCM referred to as the "Subsidiary Issuers", issued of $17,550 million senior unsecured notes (the "2017 Senior Notes"). Our 2017 Senior Notes were fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by Broadcom-Singapore and the Partnership, subject to certain release conditions described in the indenture governing the 2017 Senior Notes (the "2017 Indentures"). On April 9, 2018, Broadcom ("Parent Guarantor") became a guarantor of the 2017 Senior Notes and entered into supplemental indentures with the Subsidiary Issuers and the trustee of the 2017 Senior Notes. At that time, Broadcom-Singapore, a guarantor at the issuance of the 2017 Senior Notes, became an indirect wholly-owned subsidiary of Broadcom and a subsidiary guarantor ("Subsidiary Guarantor"), together with Parent Guarantor referred to as the "Guarantors". In addition, the Partnership was released from its guarantee of the 2017 Senior Notes under each of the 2017 Indentures in accordance with their terms. Each series of 2017 Senior Notes pays interest semi-annually in cash in arrears on January 15 and July 15 of each year.

We may redeem all or a portion of our 2017 Senior Notes at any time prior to their maturity, subject to a specified make whole premium as set forth in the 2017 Indentures. In the event of a change of control triggering event, holders of our 2017 Senior Notes will have the right to require us to purchase for cash, all or a portion of their 2017 Senior Notes at a redemption price of 101% of the aggregate principal amount plus accrued and unpaid interest.

During fiscal year 2018, substantially all of the 2017 Senior Notes were tendered and exchanged for notes registered with the U.S. Securities and Exchange Commission ("SEC"), with substantially identical terms.

Assumed CA Senior Notes

In connection with the CA Merger, we assumed $2.25 billion in aggregate principal amount of CA's outstanding senior unsecured notes (the "Assumed CA Senior Notes"). CA remains the sole obligor under the Assumed CA Senior Notes. We may redeem all or a portion of the Assumed CA Senior Notes at any time, subject to a specified make-whole premium as set forth in the related indenture. In the event of a change in control, each note holder will have the right to require us to repurchase all or any part of the holder's notes in cash at a price equal to 101% of the principal amount of such notes plus accrued and unpaid interest, if any, to the date of repurchase (subject to the right of holders of record on the relevant interest payment date to receive interest due). Each series of the Assumed CA Senior Notes pays interest semi-annually.

In October 2019, we fully repaid our 3.600% notes due August 2020 of $400 million. As a result of this payoff, we wrote off $1 million of unamortized premium and incurred a make-whole premium of $5 million, which were included in interest expense in the consolidated statements of operations.

Assumed Brocade Debt

As a result of the Brocade Merger, we assumed $575 million in aggregate principal amount of Brocade's 1.375% convertible senior unsecured notes due 2020, or the Assumed Brocade Convertible Notes. The Brocade Merger was a "fundamental change" as well as a "make-whole fundamental change" as defined under the terms of the indenture governing the Assumed Brocade Convertible Notes. Accordingly, the holders of the Assumed Brocade Convertible Notes received the right to require us to repurchase their notes for cash. During fiscal year 2018, we repurchased $537 million in aggregate principal amount for $548 million at a conversion rate of $1,018 for each $1,000 of principal surrendered for conversion. The remaining outstanding Assumed Brocade Convertible Notes are convertible into cash at a conversion rate of $812 for each $1,000 of principal.

We also assumed $300 million of Brocade’s 4.625% senior unsecured notes due 2023. In January 2018, we redeemed all of these outstanding notes for a total payment of $308 million.

Fair Value of Debt

As of November 3, 2019, the estimated aggregate fair value of our debt was $33,652 million. The fair value of our senior notes was determined using quoted prices from less active markets. The estimated fair value of our 2019 Term Loans approximated their carrying value due to their floating interest rates and consistency in our credit ratings. The estimated fair value of our Commercial Paper approximated its carrying value due to the short-term nature of these borrowings. All of our debt obligations are categorized as Level 2 instruments.

Future Principal Payments of Debt

The future scheduled principal payments of debt as of November 3, 2019 were as follows:

Fiscal Year:	**Future Scheduled Principal Payments**
	(In millions)
2020	$ 4,537
2021	2,750
2022	5,509
2023	1,250
2024	5,307
Thereafter	13,706
Total	$ 33,059

As of November 3, 2019 and November 4, 2018, we accrued interest payable of $214 million and $165 million, respectively, and were in compliance with all debt covenants.

10. Stockholders' Equity

Mandatory Convertible Preferred Stock Offering

On September 30, 2019, we completed an offering of approximately 4 million shares of 8.00% Mandatory Convertible Preferred Stock, Series A, $0.001 par value per share (the "Mandatory Convertible Preferred Stock"), including certain additional shares sold pursuant to the underwriters' option, which generated net proceeds of approximately $3,679 million. We used the net proceeds of this offering to repay a portion of the outstanding borrowings under our existing term loan facilities.

The holders of Mandatory Convertible Preferred Stock are entitled to receive, when, as and if declared by our Board of Directors, or an authorized committee thereof, out of funds legally available for payment, cumulative dividends at the annual rate of 8.00% of the liquidation preference of $1,000 per share (equivalent to $80 annually per share), payable in cash or, subject to certain limitations, by delivery of shares of our common stock or any combination of cash and shares of our common stock, at our election; provided, however, that any undeclared and unpaid dividends will continue to accumulate.

Subject to limited exceptions, no dividends may be declared or paid on shares of our common stock, unless all accumulated dividends have been paid or set aside for payment on all outstanding shares of our Mandatory Convertible Preferred Stock for all past completed dividend periods. In the event of our voluntary or involuntary liquidation, dissolution or winding-up, no distribution of our assets may be made to holders of our common stock until we have paid to holders of our Mandatory Convertible Preferred Stock a liquidation preference equal to $1,000 per share plus accumulated and unpaid dividends.

Unless earlier converted, each outstanding share of Mandatory Convertible Preferred Stock will automatically convert on the mandatory conversion date, which is expected to be September 30, 2022, into between 3.0303 and 3.5422 shares of our common stock, depending on the applicable market value of our common stock upon conversion and subject to customary anti-dilution adjustments. At any time prior to September 30, 2022, holders may elect to convert each share of Mandatory Convertible Preferred Stock into shares of our common stock at the minimum conversion rate of 3.0303, subject to anti-dilution adjustments and certain exceptions.

The Mandatory Convertible Preferred Stock will not be redeemable at our election before the mandatory conversion date. The holders of the Mandatory Convertible Preferred Stock will not have any voting rights, with limited exceptions.

During the fourth quarter of fiscal year 2019, we recognized $29 million of earned preferred stock dividends and presented it as temporary equity in our consolidated balance sheet as of November 3, 2019.

Redomiciliation Transaction

For the period prior to the Redomiciliation Transaction, our stockholders' equity reflected Broadcom-Singapore's outstanding ordinary shares. On April 4, 2018, all Broadcom-Singapore outstanding ordinary shares were exchanged on a one-for-one basis for newly issued shares of Broadcom common stock and Broadcom-Singapore became a wholly-owned subsidiary of Broadcom.

In conjunction with the Redomiciliation Transaction and pursuant to the Mandatory Exchange, all outstanding LP Units held by the limited partners were mandatorily exchanged for approximately 22 million newly issued shares of Broadcom common stock on a one-for-one basis. As a result, all limited partners of the Partnership became common stockholders of Broadcom. In addition, all related outstanding special preference shares of Broadcom-Singapore were automatically redeemed upon the Mandatory Exchange.

Noncontrolling Interest

Immediately prior to the Redomiciliation Transaction, the limited partners held a noncontrolling interest of approximately 5% in the Partnership through their ownership of LP Units. Accordingly, net income attributable to our common stock in our consolidated statements of operations excluded the noncontrolling interest's proportionate share of our results prior to the Redomiciliation Transaction. In addition, we presented the proportionate share of equity attributable to the noncontrolling interest as a separate component of total equity within our consolidated statements of equity for the periods prior to the Redomiciliation Transaction.

Dividends and Distributions

	Fiscal Year		
	2019	2018	2017
	(In millions, except per share data)		
Cash dividends and distributions declared and paid per share/unit	$ 10.60	$ 7.00	$ 4.08
Cash dividends declared and paid to common stockholders	$ 4,235	$ 2,921	$ 1,653
Cash distributions declared and paid to limited partners	$ —	$ 77	$ 92

Stock Repurchase Program

Pursuant to an $18 billion stock repurchase program authorized by our Board of Directors, we repurchased and retired approximately 21 million and 32 million shares of our common stock for $5,435 million and $7,258 million during fiscal years 2019 and 2018, respectively. This authorization ended on November 3, 2019.

Equity Incentive Award Plans

Stock-based incentive awards are provided to employees and directors under the terms of various Broadcom equity incentive plans.

2009 Plan

In July 2009, our Board of Directors adopted, and our stockholders approved, the Avago Technologies Limited 2009 Equity Incentive Award Plan (the "2009 Plan") to authorize the grant of options, stock appreciation rights, RSUs, dividend equivalents, performance awards, and other stock-based awards. A total of 20 million shares of common stock were initially reserved for issuance under the 2009 Plan, subject to annual increases starting in fiscal year 2012. The amount of the annual increase was equal to the least of (a) 6 million shares, (b) 3% of the common stock outstanding on the last day of the immediately preceding fiscal year and (c) such smaller number of common stock as determined by our Board. However, no more than 90 million shares of common stock may be issued upon the exercise of equity awards issued under the 2009 Plan. The 2009 Plan became effective on July 27, 2009.

Options issued to employees under the 2009 Plan prior to March 2011 generally expire ten years following the date of grant. Since March 2011, options issued to employees under the 2009 Plan generally expire seven years after the date of grant. Options awarded to non-employees under this plan generally expire after five years. Options issued to both employees and non-employees under the 2009 Plan generally vested over a period of four years from the date of grant and were granted with an exercise price equal to the fair market value on the date of grant. Any stock options cancelled or forfeited after July 27, 2009 under the equity incentive plans adopted prior to the 2009 Plan became available for issuance under the 2009 Plan. RSU awards granted to employees under the 2009 Plan generally vest annually over four years.

The 2009 Plan expired in July 2019.

2003 Plan

In connection with the acquisition of LSI Corporation ("LSI"), we assumed the LSI 2003 Equity Incentive Plan (the "2003 Plan") and outstanding unvested stock options and RSUs originally granted by LSI under the 2003 Plan that were held by continuing employees. Under the 2003 Plan, we may grant to former employees of LSI and other employees who were not employees of Broadcom at the time of the acquisition restricted stock awards, RSUs, stock options and stock appreciation rights with an exercise price that is no less than the fair market value on the date of grant. No participant may be granted stock options covering more than 4 million shares or more than an aggregate of 1 million shares of restricted stock and RSUs in any fiscal year. Equity awards granted under the 2003 Plan following the LSI acquisition are expected to be on similar terms and consistent with similar grants made pursuant to the 2009 Plan. As of November 3, 2019, 3 million shares remained available for issuance under the 2003 Plan.

2012 Plan

In connection with the acquisition of BRCM, we assumed the BRCM 2012 Stock Incentive Plan (the "2012 Plan") and outstanding unvested RSUs originally granted by BRCM under the 2012 Plan that were held by continuing employees. Under the 2012 Plan, we may grant to former employees of BRCM and other employees who were not employees of Broadcom at the time of the acquisition restricted stock awards, RSUs, stock options and stock appreciation rights with an exercise price that is no less than the fair market value on the date of grant. No participant may be granted stock options, restricted stock or RSUs, covering more than an aggregate of 4 million shares in any fiscal year. Equity awards granted under the 2012 Plan following the acquisition of BRCM are on similar terms and consistent with similar grants made pursuant to the 2009 Plan. As of November 3, 2019, 82 million shares remained available for issuance under the 2012 Plan. The number of shares available for issuance under the 2012 Plan is subject to an annual increase of 12 million shares.

We also grant market-based RSUs with both a service condition and a market condition as part of our equity compensation programs. The market-based RSUs generally vest over four years, subject to satisfaction of market conditions. During fiscal years 2019, 2018 and 2017, we granted market-based RSUs under which grantees may receive the number of shares ranging from 0% to 450% of the original grant at vesting based upon the total stockholder return ("TSR") on our common stock as compared to the TSR of an index group of companies.

Amendment to the RSU Vesting Schedule

During fiscal year 2019, the Compensation Committee of our Board of Directors approved an amendment to the vesting of time-based RSUs (other than those assumed in an acquisition), held by approximately 16,500 employees below the vice president level, from an annual vesting cycle to a quarterly vesting cycle.

Employee Stock Purchase Plan

The ESPP provides eligible employees with the opportunity to acquire an ownership interest in us through periodic payroll deductions, based on a 6-month look-back period, at a price equal to the lesser of 85% of the fair market value of our common stock at either the beginning or ending of the relevant offering period. The ESPP is structured as a qualified employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986. However, the ESPP is not intended to be a qualified pension, profit sharing or stock bonus plan under Section 401(a) of the Internal Revenue Code of 1986 and is not subject to the provisions of Employee Retirement Income Security Act of 1974.

Table of Contents

Stock-Based Compensation Expense

	Fiscal Year		
	2019	2018	2017
		(In millions)	
Cost of products sold	$ 120	$ 77	$ 64
Cost of subscriptions and services	43	9	—
Research and development	1,532	855	636
Selling, general and administrative	490	286	220
Total stock-based compensation expense (a)	$ 2,185	$ 1,227	$ 920
Estimated income tax benefits for stock-based compensation	$ 400	$ 195	$ 249
Income tax benefits for stock-based awards exercised or released	$ 232	$ 181	$ 273

____

(a) Does not include stock-based compensation related to discontinued operations recognized during fiscal year 2017, which was included in loss from discontinued operations, net of income taxes in our consolidated statements of operations.

We have assumed an annualized forfeiture rate for RSUs of 5%. We will recognize additional expense if actual forfeitures are lower than we estimated, and will recognize a benefit if actual forfeitures are higher than we estimated.

During the first quarter of fiscal year 2019, the Compensation Committee of our Board of Directors approved a broad-based program of multi-year equity grants of time- and market-based RSUs (the "Multi-Year Equity Awards") in lieu of our annual employee equity awards historically granted on March 15 of each year. Each Multi-Year Equity Award vests on the same basis as four annual grants made March 15 of each year, beginning in fiscal year 2019, with successive four-year vesting periods. Stock-based compensation expense related to the Multi-Year Equity Awards was $890 million for fiscal year 2019, including $133 million of Multi-Year Equity Awards granted to employees acquired in the CA Merger.

In connection with the amendment to the vesting of certain time-based RSUs from an annual cycle to a quarterly cycle, we recognized approximately $140 million in incremental compensation cost during fiscal year 2019.

For fiscal year 2019, stock-based compensation expense included $83 million related to equity awards assumed in connection with the CA Merger. In addition to stock-based compensation expense presented above, in fiscal year 2019, we recognized $75 million in restructuring charges for accelerated vesting of assumed equity awards held by employees terminated in connection with the CA Merger.

As of November 3, 2019, the total unrecognized compensation cost related to unvested stock-based awards was $5,641 million, which is expected to be recognized over the remaining weighted-average service period of 4.1 years.

The following table summarizes the weighted-average assumptions utilized to calculate the fair value of market-based awards granted in the periods presented:

	Market-Based Awards		
	Fiscal Year		
	2019	2018	2017

Risk-free interest rate	2.7 %	2.4 %	1.7 %
Dividend yield	4.4 %	2.6 %	1.8 %
Volatility	33.0 %	32.5 %	32.3 %
Expected term (in years)	4.0	4.0	4.0

The risk-free interest rate was derived from the average U.S. Treasury Strips rate, which approximated the rate in effect appropriate for the term at the time of grant.

The dividend yield was based on the historical and expected dividend payouts as of the respective award grant dates.

The volatility was based on our own historical stock price volatility over the period commensurate with the expected life of the awards and the implied volatility of a 180-day call option on our own common stock measured at a specific date.

The expected term was commensurate with the awards' contractual terms.

Table of Contents

Restricted Stock Unit Awards

A summary of time- and market-based RSU activity is as follows:

	Number of RSUs Outstanding	Weighted-Average Grant Date Fair Value Per Share
	(In millions, except per share data)	
Balance as of October 30, 2016	17	$ 130.71
Granted	8	$ 199.33
Vested	(5)	$ 126.81
Forfeited	(2)	$ 142.78
Balance as of October 29, 2017	18	$ 163.42
Granted	7	$ 239.48
Vested	(6)	$ 155.78
Forfeited	(1)	$ 175.46
Balance as of November 4, 2018	18	$ 195.50
Assumed in CA Merger	1	$ 206.14
Granted	33	$ 183.64
Vested	(10)	$ 192.28
Forfeited	(2)	$ 182.80
Balance as of November 3, 2019	40	$ 188.52

The aggregate fair value of time- and market-based RSUs that vested in fiscal years 2019, 2018 and 2017 was $2,958 million, $1,516 million and $1,172 million, respectively, which represents the market value of our common stock on the date that the RSUs vested. The number of RSUs vested included shares of common stock that we withheld for settlement of employees’ tax obligations due upon the vesting of RSUs.

Stock Option Awards

A summary of time- and market-based stock option activity is as follows:

	Number of Options Outstanding	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Life (In years)	Aggregate Intrinsic Value
	(In millions, except years and per share data)			
Balance as of October 30, 2016	15	$ 48.77		
Exercised	(4)	$ 45.48		$ 682
Cancelled	(1)	$ 66.08		
Balance as of October 29, 2017	10	$ 49.54		
Exercised	(2)	$ 47.41		$ 534
Cancelled	— *	$ 72.37		
Balance as of November 4, 2018	8	$ 50.14		
Exercised	(4)	$ 47.88		$ 761
Cancelled	— *	$ 49.00		

Balance as of November 3, 2019	4	$	51.83	1.11	$	1,077
Fully vested as of November 3, 2019	4	$	51.83	1.11	$	1,077

* Represents fewer than 0.5 million shares.

11. Income Taxes

Components of Income from Continuing Operations Before Income Taxes

As a result of the Redomiciliation Transaction on April 4, 2018, the following references to domestic activities represent the U.S. for fiscal years 2019 and 2018 and Singapore for fiscal year 2017. The following table presents the components of income from continuing operations before income taxes for financial reporting purposes:

	Fiscal Year		
	2019	**2018**	**2017**
		(In millions)	
Domestic income (loss)	$ (4,116)	$ (705)	$ 2,102
Foreign income (loss)	6,342	5,250	(277)
Income from continuing operations before income taxes	$ 2,226	$ 4,545	$ 1,825

Components of Provision for (Benefit from) Income Taxes

The benefit from income taxes in fiscal year 2019 was primarily due to $232 million of excess tax benefits from stock-based awards that vested or were exercised during the period, $131 million from the recognition of gross unrecognized tax benefits as a result of audit settlements and lapses of statutes of limitations net of increases in balances related to tax positions taken during the current year, $80 million of benefit from deferred tax remeasurement in state and foreign jurisdictions, $66 million of benefit related to internal reorganizations, and $54 million of benefit from the partial release of our valuation allowance as a result of the CA Merger, partly offset by $113 million of expense from a change in estimate of our fiscal year 2018 benefit as a result of proposed U.S. Treasury regulations issued in fiscal year 2019 related to the 2017 Tax Reform Act.

The 2017 Tax Reform Act made significant changes to the U.S. Internal Revenue Code, including, but not limited to, a decrease in the U.S. corporate tax rate from 35% to 21% effective for tax years beginning after December 31, 2017, the transition of U.S. international taxation from a worldwide tax system to a participation exemption regime, and the transition tax on the mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations. Several provisions of the 2017 Tax Reform Act became effective for us for the first time in fiscal year 2019, including a new minimum tax on certain foreign earnings, known as Global Intangible Low-taxed Income (“GILTI”), a new incentive for foreign-derived intangible income, changes to the limitation on the deductibility of certain executive compensation, and new limitations on the deductibility of interest expense. We have elected to account for GILTI as a period cost rather than on a deferred basis.

On December 22, 2017, the SEC issued Staff Accounting Bulletin No. 118. This guidance allowed registrants a “measurement period,” not to exceed one year from the date of enactment, to complete their accounting for the tax effects of the 2017 Tax Reform Act. We relied on this guidance to refine our estimates of the impact of the 2017 Tax Reform Act during the measurement period. The measurement period ended during our fiscal quarter ended February 3, 2019, and no adjustments were recorded. As a result, we consider our accounting for the tax effects of the 2017 Tax Reform Act to be complete based on our interpretation of the law and subsequently issued guidance. However, it is expected that the U.S. Treasury will continue to issue regulations and other guidance on the application of certain provisions of the 2017 Tax Reform Act that may impact our interpretation of the rules and our calculation of the tax impact of the transition tax on the mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations as of December 31, 2017 or other provisions of the 2017 Tax Reform Act.

In connection with the CA Merger in November 2018, we established $2,434 million of net deferred tax liabilities on the excess of the book basis over the tax basis of acquired identified intangible assets and investments in certain foreign subsidiaries that had not been indefinitely reinvested, partially offset by acquired tax attributes.

The benefit from income taxes in fiscal year 2018 was primarily due to income tax benefits recognized from the enactment of the 2017 Tax Reform Act and the Redomiciliation Transaction. As a result of the 2017 Tax Reform Act, we recorded a total provisional benefit of $7,278 million in fiscal year 2018. This provisional benefit included $7,212 million related to the Transition Tax, which was primarily due to a reduction of $10,457 million in our federal deferred income tax liabilities on accumulated non-U.S. earnings, partially offset by $2,133 million of federal provisional long-term Transaction Tax payable and $1,112 million of unrecognized federal tax benefits related to the Transition Tax. The provisional benefit also included $66 million related to the remeasurement of certain deferred tax assets and liabilities, which were based on the tax rates at which they were expected to be reversed in the future as a result of the 2017 Tax Reform Act.

The impact of the Redomiciliation Transaction and the related internal reorganizations included tax benefits of $1,162 million in fiscal year 2018 from the remeasurement of withholding taxes on undistributed earnings, partially offset by a $167 million tax provision on foreign earnings and profits subject to U.S. tax.

The income tax provision for fiscal year 2017 was primarily due to profit before tax and a discrete expense of $76 million resulting from entity reorganizations partially offset by the recognition of $273 million of excess tax benefits from stock-based awards that vested or were exercised during fiscal year 2017 and, to a lesser extent, the recognition of previously unrecognized tax benefits primarily as a result of audit settlements.

We have obtained several tax incentives from the Singapore Economic Development Board, an agency of the Government of Singapore, which provide that qualifying income earned in Singapore is subject to tax incentives or reduced rates of Singapore income tax. Each tax incentive was separate and distinct from the others, and may be granted, withheld, extended, modified, truncated, complied with or terminated independently without any effect on the other incentives. Subject to our compliance with the conditions specified in these incentives and legislative developments, the Singapore tax incentive is presently expected to expire in November 2025.

We have also obtained a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. The tax holiday that we negotiated in Malaysia is also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with the conditions specified, we will lose the related tax benefits and we could be required to refund previously realized material tax benefits.

Before taking into consideration the effects of the 2017 Tax Reform Act and other indirect tax impact, the effect of these tax incentives and tax holiday was to increase the benefit from income taxes by approximately $923 million and $590 million and increase diluted net income per share by $2.20 and $1.37 for fiscal years 2019 and 2018, respectively. For fiscal year 2017, the effect of these tax incentives and tax holiday was to reduce the overall provision for income taxes by approximately $237 million and reduce diluted net loss per share by $0.56.

During fiscal year 2019, we reevaluated our indefinite reinvestment assertion with regards to certain accumulated foreign earnings and concluded that we intend to indefinitely reinvest $2,677 million of such earnings as a result of interpretive guidance issued by the IRS. The amount of unrecognized deferred income tax liability indefinitely related to these earnings is estimated to be $281 million. All other current and future earnings of all our foreign subsidiaries are not considered permanently reinvested.

As a result of the Redomiciliation Transaction on April 4, 2018, the following references to current tax expense (benefit from) federal and state represent the U.S. for fiscal years 2019 and 2018 and Singapore for fiscal year 2017. Significant components of the provision for (benefit from) income taxes are as follows:

	Fiscal Year		
	2019	**2018**	**2017**
		(In millions)	
Current tax expense (benefit from):			
Federal	$ (49)	$ 255	$ 112
State	(16)	38	—
Foreign	342	171	158
	277	464	270
Deferred tax expense (benefit from):			
Federal	(497)	(8,666)	(1)
State	(113)	(103)	—
Foreign	(177)	221	(234)
	(787)	(8,548)	(235)

Total provision for (benefit from) income taxes	$ (510)	$ (8,084)	$ 35

Table of Contents

Rate Reconciliation

	Fiscal Year		
	2019	2018	2017
Statutory tax rate	21.0 %	21.0 %	17.0 %
State, net of federal benefit	(4.6)	(1.1)	—
2017 Tax reform	5.1	(159.0)	—
Redomiciliation transaction withholding tax remeasurement	—	(25.6)	—
Foreign income taxed at different rates	(52.5)	(16.3)	(0.8)
Excess tax benefits from stock-based compensation	(10.4)	(4.0)	—
Research and development credit	(7.6)	(2.9)	—
Deemed inclusion of foreign earnings	25.9	4.7	—
Tax holidays and concessions	—	—	(13.0)
Other, net	0.2	5.3	(1.3)
Effective tax rate on income before income taxes	(22.9)%	(177.9)%	1.9 %

Summary of Deferred Income Taxes

	November 3, 2019	November 4, 2018
	(In millions)	
Deferred income tax assets:		
Net operating loss, credit and other carryforwards	$ 1,733	$ 1,421
Deferred revenue	316	—
Employee stock awards	218	159
Other deferred income tax assets	313	226
Gross deferred income tax assets	2,580	1,806
Less valuation allowance	(1,563)	(1,347)
Deferred income tax assets	1,017	459
Deferred income tax liabilities:		
Depreciation and amortization	2,360	316
Foreign earnings not indefinitely reinvested	138	16
Other deferred income tax liabilities	—	12
Deferred income tax liabilities	2,498	344
Net deferred income tax assets (liabilities)	$ (1,481)	$ 115

Deferred income taxes reflect the net effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their basis for income tax purposes and the tax effects of net operating losses and tax credit carryforwards. The increase in deferred income tax liabilities for depreciation and amortization is primarily due to the CA Merger.

The following table presents net deferred income tax assets (liabilities) as reflected on the consolidated balance sheets:

	November 3, 2019	November 4, 2018
	(In millions)	
Other long-term assets	$ 50	$ 284
Other long-term liabilities	(1,531)	(169)
Net long-term income tax assets (liabilities)	$ (1,481)	$ 115

The increase in the valuation allowance to $1,563 million in fiscal year 2019 from $1,347 million in fiscal year 2018 was primarily due to the CA Merger, foreign deferred tax assets arising from foreign credits, and losses not expected to be realized.

As of November 3, 2019, we had U.S. federal net operating loss carryforwards of $123 million, U.S. state net operating loss carryforwards of $2,813 million and other foreign net operating loss carryforwards of $1,157 million. U.S. federal and state net operating loss carryforwards begin to expire in fiscal year 2020. The other foreign net operating losses expire in various fiscal years beginning 2020. As of November 3, 2019, we had $252 million and $1,653 million of U.S. federal and state research and development tax credits, respectively, which if not utilized, begin to expire in fiscal year 2020.

The U.S. Tax Reform Act of 1986 limits the use of net operating loss and tax credit carryforwards in the case of an "ownership change" of a corporation or separate return loss year limitations. Any ownership changes, as defined, may restrict utilization of carryforwards. As of November 3, 2019, we had approximately $123 million of federal net operating loss carryforwards in the U.S. subject to an annual limitation. We do not expect these limitations to result in any permanent loss of our tax benefits.

Uncertain Tax Positions

Gross unrecognized tax benefits increased by $392 million during fiscal year 2019, resulting in gross unrecognized tax benefits of $4,422 million as of November 3, 2019.

Gross unrecognized tax benefits increased by $1,774 million during fiscal year 2018, resulting in gross unrecognized tax benefits of $4,030 million as of November 4, 2018. The increase in gross unrecognized tax benefits was primarily due to the recognition of unrecognized tax positions of $1,112 million related to the Transition Tax, offset by a reduction of our federal deferred income tax liabilities on accumulated non-U.S. earnings. The increase in gross unrecognized tax benefits was also due to the Redomiciliation Transaction, and to a lesser extent, the Brocade Merger.

Gross unrecognized tax benefits increased by $273 million during fiscal year 2017, resulting in gross unrecognized tax benefits of $2,256 million as of October 29, 2017. The increase in gross unrecognized tax benefits was primarily a result of restructuring activities in fiscal year 2017. During fiscal year 2017, we recognized $121 million of previously unrecognized tax benefits as a result of the audit settlement with taxing authorities, and $12 million as a result of the expiration of the statute of limitations for certain audit periods.

We recognize interest and penalties related to unrecognized tax benefits within provision for income taxes in the accompanying consolidated statements of operations. Accrued interest and penalties were included within other long-term liabilities on the consolidated balance sheets. As of November 3, 2019 and November 4, 2018, the combined amount of cumulative accrued interest and penalties was approximately $303 million and $190 million, respectively. The increase in cumulative accrued interest and penalties was primarily a result of the CA Merger.

The following table reconciles the beginning and ending balance of gross unrecognized tax benefits:

	Fiscal Year		
	2019	2018	2017
	(In millions)		
Beginning balance	$ 4,030	$ 2,256	$ 1,983
Lapses of statutes of limitations	(36)	(20)	(12)
Increases in balances related to tax positions taken during prior periods (including those related to acquisitions made during the year)	467	361	47
Decreases in balances related to tax positions taken during prior periods	(270)	(289)	(32)
Increases in balances related to tax positions taken during current period	460	1,726	391
Decreases in balances related to settlement with taxing authorities	(229)	(4)	(121)
Ending balance	$ 4,422	$ 4,030	$ 2,256

A portion of our unrecognized tax benefits will affect our effective tax rate if they are recognized upon favorable resolution of the uncertain tax positions. As of November 3, 2019 and November 4, 2018, approximately $4,725 million and $4,220 million of the unrecognized tax benefits including accrued interest and penalties would affect our effective tax rate, respectively.

Decreases in balances related to tax positions taken during prior periods and settlement with taxing authorities related to the settlement of income tax audits in various jurisdictions during fiscal year 2019.

We are subject to U.S. income tax examination for fiscal years 2013 and later. Certain of our acquired companies are subject to tax examinations in major jurisdictions outside of the U.S. for fiscal years 2008 and later. It is possible that our existing unrecognized tax benefits may change up to $154 million as a result of lapses of the statute of limitations for certain audit periods and/or audit examinations expected to be completed within the next 12 months.

12. Segment Information

Reportable Segments

As a result of the CA Merger, which closed on November 5, 2018, we updated our organizational structure resulting in three reportable segments: semiconductor solutions, infrastructure software and IP licensing. Each segment represents a component for which separate financial information is available that is utilized on a regular basis by the CODM in determining how to allocate resources and evaluate performance. The reportable segments are determined based on several factors including, but not limited to, customer base, homogeneity of products, technology, delivery channels and similar economic characteristics.

Semiconductor solutions. We provide semiconductor solutions for managing the movement of data in data center, telecom, enterprise and embedded networking applications. We provide a broad variety of RF semiconductor devices, wireless connectivity solutions and custom touch controllers for mobile applications. We also provide semiconductor solutions for enabling the set-top box and broadband access markets and for enabling secure movement of digital data to and from host machines, such as servers, personal computers and storage systems, to the underlying storage devices, such as hard disk drives and solid state drives. We also provide a broad variety of products for the general industrial and automotive markets.

Infrastructure software. We provide a portfolio of mainframe, enterprise and storage area networking solutions, which enables customers to leverage the benefits of agility, automation, insights, resiliency and security in managing business processes and technology investments, and to reduce the cost and complexity of managing business information within a shared data storage environment.

IP licensing. We license a portion of our broad IP portfolio.

Our CODM assesses the performance of each segment and allocates resources to those segments based on net revenue and operating results and does not evaluate our segments using discrete asset information. Operating results by segment include items that are directly attributable to each segment and also include shared expenses such as global operations, including manufacturing support, logistics and quality control, in addition to expenses associated with selling, general and administrative activities for the business, which are allocated primarily based on revenue, while facilities expenses are allocated primarily based on site-specific headcount.

Unallocated Expenses

Unallocated expenses include amortization of acquisition-related intangible assets, stock-based compensation expense, restructuring, impairment and disposal charges, acquisition-related costs, charges related to inventory step-up to fair value, and other costs, which are not used in evaluating the results of, or in allocating resources to, our segments. Acquisition-related costs also include transaction costs and any costs directly related to the acquisition and integration of acquired businesses.

Depreciation expense directly attributable to each reportable segment is included in operating results for each segment. However, the CODM does not evaluate depreciation expense by operating segment and, therefore, it is not separately presented. There was no inter-segment revenue. The accounting policies of the segments are the same as those described in the summary of significant accounting policies.

	Fiscal Year		
	2019	2018	2017
	(In millions)		
Net revenue:			
Semiconductor solutions	$ 17,368	$ 18,934	$ 17,491
Infrastructure software	5,156	1,780	—
IP licensing	73	134	145
Total net revenue	$ 22,597	$ 20,848	$ 17,636
Operating income (loss):			
Semiconductor solutions	$ 8,150	$ 9,090	$ 7,900
Infrastructure software	3,781	1,250	—
IP licensing	(2)	70	70
Unallocated expenses	(8,485)	(5,275)	(5,599)
Total operating income	$ 3,444	$ 5,135	$ 2,371

Geographic Information

Net revenue by country is based on the geographic shipment or delivery location as specified by the distributors, OEMs, contract manufacturers, channel partners, or software customers who purchased our products or services. For the majority of our products, title and control transfer to our customers in Penang, Malaysia. The products are then transported to the customer specific locations. Net revenue from the United States for fiscal years 2019, 2018, and 2017 was $4,235 million, $2,697 million and $1,266 million, respectively. Net revenue from China (including Hong Kong) for fiscal years 2019, 2018 and 2017 was $8,056 million, $10,305 million and $9,460 million, respectively. Net revenue from Singapore for fiscal year 2019 was $2,507 million (amounts were below 10% for fiscal years 2018 and 2017). Net revenue from other foreign countries for fiscal years 2019, 2018 and 2017 was $7,799 million, $7,846 million and $6,910 million, respectively. These geographic delivery locations are not necessarily indicative of the geographic location of our end customers or the country in which our end customers sell devices containing our products. For example, we believe a substantial portion of our products shipped or delivered to China (including Hong Kong) is included in devices sold by our end customers in the United States and Europe.

Long-lived assets include property, plant and equipment and are based on the physical location of the assets.

	November 3, 2019	November 4, 2018
	(In millions)	
Long-lived assets:		
United States	$ 1,763	$ 1,859
Taiwan	258	264
Other	544	512
Total long-lived assets	$ 2,565	$ 2,635

Significant Customer Information

We sell our products through our direct sales force and a select network of distributors globally. One customer accounted for 24% of our net accounts receivable balance at November 3, 2019 compared with two customers which accounted for 20% and 14% of our net accounts receivable balance at November 4, 2018. During fiscal year 2019, one customer accounted for 17% of our net revenue. Revenue from this customer was included in our semiconductor solutions segment. During fiscal year 2018, no direct customers represented more than 10% of our net revenue. During fiscal year 2017, one customer represented 14% of our net revenue. The majority of the revenue from this customer was included in our semiconductor solutions segment.

13. Commitments and Contingencies

Commitments

The following table summarizes contractual obligations and commitments as of November 3, 2019:

		Fiscal Year					
	Total	2020	2021	2022	2023	2024	Thereafter
	(In millions)						
Debt principal, interest and fees	$ 39,038	$ 5,628	$ 3,748	$ 6,415	$ 2,025	$ 5,996	$ 15,226
Purchase commitments	716	652	64	—	—	—	—
Other contractual commitments	197	133	31	19	14	—	—
Operating lease obligations	800	115	99	80	69	47	390
Total	$ 40,751	$ 6,528	$ 3,942	$ 6,514	$ 2,108	$ 6,043	$ 15,616

Debt Principal, Interest and Fees. Represents principal, estimated interest and fees on borrowings. For borrowings subject to a floating interest rate, the estimated interest was based on the rate in effect during the last month of the fiscal year ended November 3, 2019.

Purchase Commitments. Represents unconditional purchase obligations that include agreements to purchase goods or services, primarily inventory, that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable price provisions, and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty. Cancellation for outstanding purchase orders for capital expenditures in connection with internal fabrication facility expansion and construction of our new campuses is generally allowed but requires payment of all costs incurred through the date of cancellation and, therefore, cancelable purchase orders for these capital expenditures are included in the table above.

Other Contractual Commitments. Represents amounts payable pursuant to agreements related to information technology, human resources, and other service agreements.

Operating Lease Obligations. Represents real property and equipment leased from third parties under non-cancelable operating leases. Rent expense was $244 million, $233 million and $253 million for fiscal years 2019, 2018 and 2017, respectively.

Due to the inherent uncertainty with respect to the timing of future cash outflows associated with our unrecognized tax benefits at November 3, 2019, we are unable to reliably estimate the timing of cash settlement with the respective taxing authority. Therefore, $3,269 million of unrecognized tax benefits and accrued interest classified within other long-term liabilities on our consolidated balance sheet as of November 3, 2019 have been excluded from the contractual obligations table above.

Standby Letters of Credit

As of November 3, 2019 and November 4, 2018, we had standby letters of credit of $62 million and $14 million, respectively. Standby letters of credit are financial guarantees provided by third parties for leases, customs, taxes and certain self-insured risks. If the guarantees are called, we must reimburse the provider of the guarantees.

Contingencies

From time to time, we are involved in litigation that we believe is of the type common to companies engaged in our line of business, including commercial disputes, employment issues and disputes involving claims by third parties that our activities infringe their patent, copyright, trademark or other IP rights. Legal proceedings are often complex, may require the expenditure of significant funds and other resources, and the outcome of litigation is inherently uncertain, with material adverse outcomes possible. IP property claims generally involve the demand by a third-party that we cease the manufacture, use or sale of the allegedly infringing products, processes or technologies and/or pay substantial damages or royalties for past, present and future use of the allegedly infringing IP. Claims that our products or processes infringe or misappropriate any third-party IP rights (including claims arising through our contractual indemnification of our customers) often involve highly complex, technical issues, the outcome of which is inherently uncertain. Moreover, from time to time, we pursue litigation to assert our IP rights. Regardless of the merit or resolution of any such litigation, complex IP litigation is generally costly and diverts the efforts and attention of our management and technical personnel.

Lawsuits Relating to the Acquisition of Emulex Corporation

On April 8, 2015, a putative class action complaint was filed in the U.S. Central District Court, entitled Gary Varjabedian, et al. v. Emulex Corporation, et al., No. 8:15-cv-554-CJC-JCG. The complaint names as defendants Emulex Corporation ("Emulex"), its directors, AT Wireless and Emerald Merger Sub, and purported to assert claims under Sections 14(d), 14(e) and 20(a) of the Exchange Act. The complaint alleged, among other things, that the board of directors of Emulex failed to provide material information and/or omitted material information from the Solicitation/Recommendation Statement on Schedule 14D-9 filed with the SEC on April 7, 2015 by Emulex, together with the exhibits and annexes thereto. The complaint sought to enjoin the tender offer to purchase all of the outstanding shares of Emulex common stock, as well as certain other equitable relief and attorneys' fees and costs. On July 28, 2015, the U.S. Central District Court issued an order appointing the lead plaintiff and approving lead counsel for the putative class. On September 9, 2015, plaintiff filed a first amended complaint seeking rescission of the merger, unspecified money damages, other equitable relief and attorneys' fees and costs. On October 13, 2015, defendants moved to dismiss the first amended complaint, which the U.S. Central District Court granted with prejudice on January 13, 2016. Plaintiff filed a notice of appeal to the United States Court of Appeals for the Ninth Circuit (the "Ninth Circuit Court") on January 15, 2016. The appeal is captioned Gary Varjabedian, et al. v. Emulex Corporation, et al., No. 16-55088. On June 27, 2016, the Plaintiff-Appellant filed his opening brief, on August 17 and August 22, 2016, the Defendants-Appellees filed their answering briefs, and on October 5, 2016 Plaintiff-Appellant filed his reply brief. The Ninth Circuit Court heard oral arguments on October 5, 2017. On April 20, 2018, the Ninth Circuit Court issued an opinion affirming in part and reversing in part the decision of the U.S. Central District Court and remanding Plaintiff-Appellant's claims under Sections 14(e) and 20(a) of the Exchange Act to the U.S. Central District Court for reconsideration. On May 4, 2018, the Defendants-Appellees filed a Petition for Rehearing En Banc with the Ninth Circuit Court. On July 13, 2018, Plaintiff-Appellant filed an Opposition to the Petition for Rehearing En Banc. On September 6, 2018, the Ninth Circuit Court issued an order denying the Petition for Rehearing En Banc. On October 11, 2018, Defendants-Appellees filed a Petition for a Writ of Certiorari to the United States Supreme Court (the "U.S. Supreme Court"). On January 4, 2019, the U.S. Supreme Court granted certiorari. On April 23, 2019, the U.S. Supreme Court dismissed the writ of certiorari as having been improvidently granted. On May 28, 2019, the Ninth Circuit Court remanded the case back to the U.S. Central District Court. On October 6, 2019, Plaintiffs voluntarily dismissed AT Wireless from this action. On October 7, 2019, the remaining defendants, Emulex and its directors, filed motions to dismiss the complaint, which are set to be heard on February 4, 2020. We believe these claims are all without merit and intend to vigorously defend these actions.

Other Matters

In addition to the matters discussed above, we are currently engaged in a number of legal actions in the ordinary course of our business.

Contingency Assessment

We do not believe, based on currently available facts and circumstances, that the final outcome of any pending legal proceedings or ongoing regulatory investigations, taken individually or as a whole, will have a material adverse effect on our consolidated financial statements. However, lawsuits may involve complex questions of fact and law and may require the expenditure of significant funds and other resources to defend. The results of litigation or regulatory investigations are inherently uncertain, and material adverse outcomes are possible. From time to time, we may enter into confidential discussions regarding the potential settlement of such lawsuits. Any settlement of pending litigation could require us to incur substantial costs and other ongoing expenses, such as future royalty payments in the case of an intellectual property dispute.

During the periods presented, no material amounts have been accrued or disclosed in the accompanying consolidated financial statements with respect to loss contingencies associated with any other legal proceedings or regulatory investigations, as potential losses for such matters are not considered probable and ranges of losses are not reasonably estimable. These matters are subject to many uncertainties and the ultimate outcomes are not predictable. There can be no assurances that the actual amounts required to satisfy any liabilities arising from the matters described above will not have a material adverse effect on our consolidated financial statements.

Other Indemnifications

As is customary in our industry and as provided for in local law in the U.S. and other jurisdictions, many of our standard contracts provide remedies to our customers and others with whom we enter into contracts, such as defense, settlement, or payment of judgment for IP claims related to the use of our products. From time to time, we indemnify customers, as well as our suppliers, contractors, lessors, lessees, companies that purchase our businesses or assets and others with whom we enter into contracts, against combinations of loss, expense, or liability arising from various triggering events related to the sale and the use of our products, the use of their goods and services, the use of facilities and state of our owned facilities, the state of the assets and businesses that we sell and other matters covered by such contracts, usually up to a specified maximum amount. In addition, from time to time we also provide protection to these parties against claims related to undiscovered liabilities, additional product liabilities or environmental obligations. In our experience, claims made under such indemnifications are rare and the associated estimated fair value of the liability is not material.

14. Restructuring, Impairment and Disposal Charges

Restructuring Charges

The following is a summary of significant restructuring expense recognized in continuing operations, primarily in operating expenses:

- During fiscal year 2019, we initiated cost reduction activities associated with the CA Merger. As a result, we recognized $740 million of restructuring expense primarily related to employee termination and lease and other exit costs during fiscal year 2019. We expect these restructuring activities to be substantially completed by the end of fiscal year 2020.

- During fiscal year 2018, we initiated cost reduction activities associated with the Brocade Merger. As a result, we recognized $2 million and $176 million of restructuring expense in fiscal years 2019 and 2018, respectively. These charges primarily related to employee termination costs. We have substantially completed the restructuring activities related to the acquisition of Brocade.

- In connection with cost reduction activities associated with the acquisition of BRCM, we recognized $4 million, $50 million and $124 million of restructuring expense in fiscal years 2019, 2018 and 2017, respectively. These restructuring expenses primarily related to lease and other exit costs for fiscal years 2019 and 2018 and employee termination costs for fiscal year 2017. We have substantially completed the restructuring activities related to the acquisition of BRCM.

	Employee Termination Costs	Lease and Other Exit Costs	Total
		(In millions)	
Balance as of October 30, 2016	$ 116	$ 35	$ 151
Restructuring charges (a)	86	43	129
Utilization	(174)	(61)	(235)
Balance as of October 29, 2017	28	17	45
Restructuring charges (a)	153	75	228
Utilization	(165)	(86)	(251)

Balance as of November 4, 2018	16	6	22
Liabilities assumed from CA	29	38	67
Restructuring charges	586	160	746
Utilization	(562)	(165)	(727)
Balance as of November 3, 2019 (b)	$ 69	$ 39	$ 108

(a) Included $2 million and $5 million of restructuring charges related to discontinued operations recognized during fiscal years 2018 and 2017, respectively, which was included in loss from discontinued operations in our consolidated statements of operations.

(b) The majority of the employee termination costs balance is expected to be paid within the first half of fiscal year 2020. The majority of the leases and other exit costs balance is expected to be paid through the fiscal year ending November 2, 2025.

Impairment and Disposal Charges

During fiscal year 2019, impairment and disposal charges of $67 million primarily related to property, plant and equipment. During fiscal year 2018, impairment and disposal charges of $13 million primarily related to leasehold improvements. During fiscal year 2017, impairment and disposal charges of $56 million related to property, plant and equipment and IPR&D projects acquired in the BRCM acquisition.

15. Condensed Consolidating Financial Information

As of November 4, 2018, the 2017 Senior Notes were fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by Broadcom and Broadcom-Singapore. Substantially all of the 2017 Senior Notes have been registered with the SEC. During fiscal year 2019, we liquidated Broadcom-Singapore and de-registered the Partnership. BTI, a 100%-owned subsidiary of Broadcom, became a guarantor of the 2017 Senior Notes and entered into supplemental indentures with BRCM, Cayman Finance and the trustee of the 2017 Senior Notes. As a result, Broadcom-Singapore was released from its guarantee of the 2017 Senior Notes as Subsidiary Guarantor under each of their respective indentures in accordance with their terms. On May 15, 2019, Cayman Finance was merged into BTI, with BTI remaining as the surviving entity. In connection with this merger, BTI remains a guarantor and became a co-issuer of the 2017 Senior Notes.

Accordingly, we updated the guarantor structure, which resulted in the following revised column headings:

- Parent Guarantor (Broadcom)
- Subsidiary Issuers (BTI and BRCM)
- Non-Guarantor Subsidiaries (our other subsidiaries)

We have applied the impacts of the change in guarantors and issuers retrospectively to all periods presented.

The following tables set forth the condensed consolidating financial information for the Parent Guarantor, the Subsidiary Issuers, and the Non-Guarantor Subsidiaries for the periods presented. Investments in subsidiaries are accounted for under the equity method; accordingly, entries necessary to consolidate the Parent Guarantor, the Subsidiary Issuers and the Non-Guarantor Subsidiaries are reflected in the Eliminations column. In the opinion of management, separate complete financial statements of the Subsidiary Issuers would not provide additional material information that would be useful in assessing their financial composition.

	Condensed Consolidating Balance Sheets				
	November 3, 2019				
	Parent Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(In millions)				
ASSETS					
Current assets:					
Cash and cash equivalents	$ 374	$ 613	$ 4,068	$ —	$ 5,055
Trade accounts receivable, net	—	—	3,259	—	3,259
Inventory	—	—	874	—	874
Intercompany receivable	59	439	35	(533)	—
Intercompany loan receivable	—	10,576	9,188	(19,764)	—
Other current assets	58	37	634	—	729
Total current assets	491	11,665	18,058	(20,297)	9,917
Long-term assets:					
Property, plant and equipment, net	—	759	1,806	—	2,565
Goodwill	—	1,360	35,354	—	36,714
Intangible assets, net	—	76	17,478	—	17,554
Investment in subsidiaries	51,558	45,981	—	(97,539)	—
Intercompany loan receivable, long-term	—	—	932	(932)	—
Other long-term assets	25	95	623	—	743
Total assets	$ 52,074	$ 59,936	$ 74,251	$ (118,768)	$ 67,493
LIABILITIES AND EQUITY					
Current liabilities:					
Accounts payable	$ 24	$ 38	$ 793	$ —	$ 855
Employee compensation and benefits	—	179	462	—	641
Current portion of long-term debt	—	2,750	37	—	2,787
Intercompany payable	32	4	497	(533)	—
Intercompany loan payable	13,709	4,935	1,120	(19,764)	—
Other current liabilities	25	186	2,405	—	2,616
Total current liabilities	13,790	8,092	5,314	(20,297)	6,899
Long-term liabilities:					
Long-term debt	13,440	14,731	1,840	—	30,011
Deferred tax liabilities	(126) (a)	(295) (a)	1,952	—	1,531
Intercompany loan payable, long-term	—	932	—	(932)	—
Unrecognized tax benefits	—	2,422	847	—	3,269
Other long-term liabilities	—	107	706	—	813
Total liabilities	27,104	25,989	10,659	(21,229)	42,523
Preferred stock dividend obligation	29	—	—	—	29
Total stockholders' equity	24,941	33,947	63,592	(97,539)	24,941
Total liabilities and equity	$ 52,074	$ 59,936	$ 74,251	$ (118,768)	$ 67,493

(a) Amount represents net deferred tax assets that are offset by net deferred tax liabilities on a consolidated basis.

Table of Contents

	Condensed Consolidating Balance Sheets				
	November 4, 2018				
	Parent Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(In millions)				
ASSETS					
Current assets:					
Cash and cash equivalents	$ —	$ 2,461	$ 1,831	$ —	$ 4,292
Trade accounts receivable, net	—	—	3,325	—	3,325
Inventory	—	—	1,124	—	1,124
Intercompany receivable	56	182	67	(305)	—
Intercompany loan receivable	—	9,780	4,713	(14,493)	—
Other current assets	52	37	277	—	366
Total current assets	108	12,460	11,337	(14,798)	9,107
Long-term assets:					
Property, plant and equipment, net	—	772	1,863	—	2,635
Goodwill	—	1,360	25,553	—	26,913
Intangible assets, net	—	84	10,678	—	10,762
Investment in subsidiaries	35,268	46,742	—	(82,010)	—
Intercompany loan receivable, long-term	—	—	991	(991)	—
Other long-term assets	—	250	457	—	707
Total assets	$ 35,376	$ 61,668	$ 50,879	$ (97,799)	$ 50,124
LIABILITIES AND EQUITY					
Current liabilities:					
Accounts payable	$ 19	$ 44	$ 748	$ —	$ 811
Employee compensation and benefits	—	272	443	—	715
Intercompany payable	9	58	238	(305)	—
Intercompany loan payable	8,691	4,713	1,089	(14,493)	—
Other current liabilities	—	219	593	—	812
Total current liabilities	8,719	5,306	3,111	(14,798)	2,338
Long-term liabilities:					
Long-term debt	—	17,456	37	—	17,493
Deferred tax liabilities	—	(47) (a)	216	—	169
Intercompany loan payable, long-term	—	991	—	(991)	—
Unrecognized tax benefits	—	2,563	525	—	3,088
Other long-term liabilities	—	131	248	—	379
Total liabilities	8,719	26,400	4,137	(15,789)	23,467
Total stockholders' equity	26,657	35,268	46,742	(82,010)	26,657
Total liabilities and equity	$ 35,376	$ 61,668	$ 50,879	$ (97,799)	$ 50,124

(a) Amount represents net deferred tax assets that are offset by net deferred tax liabilities on a consolidated basis.

Table of Contents

	Condensed Consolidating Statements of Operations and Comprehensive Income				
	Fiscal Year Ended				
	November 3, 2019				
	Parent Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(In millions)				
Net revenue:					
Products	$ —	$ —	$ 18,117	$ —	$ 18,117
Subscriptions and services	—	—	4,480	—	4,480
Intercompany revenue	—	1,573	—	(1,573)	—
Total net revenue	—	1,573	22,597	(1,573)	22,597
Cost of revenue:					
Cost of products sold	—	138	6,070	—	6,208
Cost of subscriptions and services	—	15	500	—	515
Intercompany cost of products sold	—	—	122	(122)	—
Amortization of acquisition-related intangible assets	—	—	3,314	—	3,314
Restructuring charges	—	(7)	84	—	77
Total cost of revenue	—	146	10,090	(122)	10,114
Gross margin	—	1,427	12,507	(1,451)	12,483
Research and development	—	1,885	2,811	—	4,696
Intercompany operating expense	—	—	1,451	(1,451)	—
Selling, general and administrative	129	324	1,256	—	1,709
Amortization of acquisition-related intangible assets	—	—	1,898	—	1,898
Restructuring, impairment and disposal charges	—	17	719	—	736
Total operating expenses	129	2,226	8,135	(1,451)	9,039
Operating income (loss)	(129)	(799)	4,372	—	3,444
Interest expense	(753)	(591)	(100)	—	(1,444)
Intercompany interest expense	(369)	(162)	(35)	566	—
Other income, net	3	25	198	—	226
Intercompany interest income	—	308	258	(566)	—
Intercompany other income (expense), net	893	—	(893)	—	—
Income (loss) from continuing operations before income taxes and earnings in subsidiaries	(355)	(1,219)	3,800	—	2,226
Provision for (benefit from) income taxes	(277)	136	(369)	—	(510)
Income (loss) from continuing operations before earnings in subsidiaries	(78)	(1,355)	4,169	—	2,736
Earnings in subsidiaries	2,802	5,299	—	(8,101)	—
Income from continuing operations and earnings in subsidiaries	2,724	3,944	4,169	(8,101)	2,736
Loss from discontinued operations, net of income taxes	—	—	(12)	—	(12)
Net income	$ 2,724	$ 3,944	$ 4,157	$ (8,101)	$ 2,724
Net income	$ 2,724	$ 3,944	$ 4,157	$ (8,101)	$ 2,724
Other comprehensive loss, net of tax:					
Change in actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	—	—	(24)	—	(24)
Other comprehensive loss	—	—	(24)	—	(24)

Comprehensive income	$ 2,724	$ 3,944	$ 4,133	$ (8,101)	$ 2,700

Table of Contents

	Condensed Consolidating Statements of Operations and Comprehensive Income Fiscal Year Ended November 4, 2018				
	Parent Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(In millions)				
Net revenue:					
Products	$ —	$ —	$ 19,754	$ —	$ 19,754
Subscriptions and services	—	—	1,094	—	1,094
Intercompany revenue	—	1,924	—	(1,924)	—
Total net revenue	—	1,924	20,848	(1,924)	20,848
Cost of revenue:					
Cost of products sold	—	120	6,804	—	6,924
Cost of subscriptions and services	—	12	85	—	97
Intercompany cost of products sold	—	—	126	(126)	—
Purchase accounting effect on inventory	—	—	70	—	70
Amortization of acquisition-related intangible assets	—	—	3,004	—	3,004
Restructuring charges	—	1	19	—	20
Total cost of revenue	—	133	10,108	(126)	10,115
Gross margin	—	1,791	10,740	(1,798)	10,733
Research and development	—	1,651	2,117	—	3,768
Intercompany operating expense	—	—	1,798	(1,798)	—
Selling, general and administrative	31	297	728	—	1,056
Amortization of acquisition-related intangible assets	—	—	541	—	541
Restructuring, impairment and disposal charges	—	53	166	—	219
Litigation settlements	—	14	—	—	14
Total operating expenses	31	2,015	5,350	(1,798)	5,598
Operating income (loss)	(31)	(224)	5,390	—	5,135
Interest expense	—	(626)	(2)	—	(628)
Intercompany interest expense	(67)	(199)	(1,449)	1,715	—
Impairment on investment	—	—	(106)	—	(106)
Other income, net	—	88	56	—	144
Intercompany interest income	—	1,516	199	(1,715)	—
Intercompany other income (expense), net	111	(56)	(55)	—	—
Income from continuing operations before income taxes and earnings in subsidiaries	13	499	4,033	—	4,545
Provision for (benefit from) income taxes	44	(7,878)	(250)	—	(8,084)
Income (loss) from continuing operations before earnings in subsidiaries	(31)	8,377	4,283	—	12,629
Earnings in subsidiaries	12,290	4,266	—	(16,556)	—
Income from continuing operations and earnings in subsidiaries	12,259	12,643	4,283	(16,556)	12,629
Loss from discontinued operations, net of income taxes	—	(2)	(17)	—	(19)
Net income	12,259	12,641	4,266	(16,556)	12,610
Net income attributable to noncontrolling interest	—	351	—	—	351
Net income attributable to common stock	$ 12,259	$ 12,290	$ 4,266	$ (16,556)	$ 12,259

Net income	$ 12,259	$ 12,641	$ 4,266	$ (16,556)	$ 12,610
Other comprehensive loss, net of tax:					
Change in actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	—	—	(8)	—	(8)
Other comprehensive loss	—	—	(8)	—	(8)
Comprehensive income	12,259	12,641	4,258	(16,556)	12,602
Comprehensive income attributable to noncontrolling interest	—	351	—	—	351
Comprehensive income attributable to Broadcom Inc. stockholders	$ 12,259	$ 12,290	$ 4,258	$ (16,556)	$ 12,251

	Parent Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	Condensed Consolidating Statements of Operations and Comprehensive Income				
	Fiscal Year Ended October 29, 2017				
	(In millions)				
Net revenue:					
Products	$ —	$ 71	$ 16,962	$ —	$ 17,033
Subscriptions and services	—	2	601	—	603
Intercompany revenue	—	2,046	8	(2,054)	—
Total net revenue	—	2,119	17,571	(2,054)	17,636
Cost of revenue:					
Cost of products sold	—	142	6,407	—	6,549
Cost of subscriptions and services	—	12	32	—	44
Intercompany cost of products sold	—	(12)	174	(162)	—
Purchase accounting effect on inventory	—	—	4	—	4
Amortization of acquisition-related intangible assets	—	7	2,504	—	2,511
Restructuring charges	—	5	14	—	19
Total cost of revenue	—	154	9,135	(162)	9,127
Gross margin	—	1,965	8,436	(1,892)	8,509
Research and development	—	1,490	1,812	—	3,302
Intercompany operating expense	—	(66)	1,958	(1,892)	—
Selling, general and administrative	—	339	450	—	789
Amortization of acquisition-related intangible assets	—	7	1,757	—	1,764
Restructuring, impairment and disposal charges	—	54	107	—	161
Litigation settlements	—	—	122	—	122
Total operating expenses	—	1,824	6,206	(1,892)	6,138
Operating income	—	141	2,230	—	2,371
Interest expense	—	(411)	(43)	—	(454)
Intercompany interest expense	—	(274)	(1,425)	1,699	—
Loss on extinguishment of debt	—	(59)	(107)	—	(166)
Other income, net	—	30	44	—	74
Intercompany interest income	—	1,425	274	(1,699)	—
Intercompany other income (expense), net	—	(589)	589	—	—
Income from continuing operations before income taxes and earnings in subsidiaries	—	263	1,562	—	1,825
Provision for (benefit from) income taxes	—	67	(32)	—	35
Income from continuing operations before earnings in subsidiaries	—	196	1,594	—	1,790
Earnings in subsidiaries	1,692	1,601	—	(3,293)	—
Income from continuing operations and earnings in subsidiaries	1,692	1,797	1,594	(3,293)	1,790
Income (loss) from discontinued operations, net of income taxes	—	(13)	7	—	(6)
Net income	1,692	1,784	1,601	(3,293)	1,784
Net income attributable to noncontrolling interest	—	92	—	—	92
Net income attributable to common stock	$ 1,692	$ 1,692	$ 1,601	$ (3,293)	$ 1,692

Net income	$ 1,692	$ 1,784	$ 1,601	$ (3,293)	$ 1,784
Other comprehensive income, net of tax:					
Change in actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	—	—	43	—	43
Other comprehensive income	—	—	43	—	43
Comprehensive income	1,692	1,784	1,644	(3,293)	1,827
Comprehensive income attributable to noncontrolling interest	—	92	—	—	92
Comprehensive income attributable to Broadcom Inc. stockholders	$ 1,692	$ 1,692	$ 1,644	$ (3,293)	$ 1,735

	Condensed Consolidating Statements of Cash Flows Fiscal Year Ended November 3, 2019				
	Parent Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(In millions)				
Cash flows from operating activities:					
Net income	$ 2,724	$ 3,944	$ 4,157	$(8,101)	$ 2,724
Adjustments to reconcile net income to net cash provided by (used in) operating activities	(3,264)	(4,571)	6,707	8,101	6,973
Net cash provided by (used in) operating activities	(540)	(627)	10,864	—	9,697
Cash flows from investing activities:					
Net change in intercompany loans	1,375	(796)	(9,210)	8,631	—
Acquisitions of businesses, net of cash acquired	(17,865)	—	1,832	—	(16,033)
Proceeds from sales of businesses	—	—	957	—	957
Purchases of property, plant and equipment	—	(165)	(297)	30	(432)
Proceeds from disposals of property, plant and equipment	—	30	88	(30)	88
Purchases of investments	(5)	—	—	—	(5)
Proceeds from sales of investments	—	—	5	—	5
Other	—	—	(2)	—	(2)
Net cash used in investing activities	(16,495)	(931)	(6,627)	8,631	(15,422)
Cash flows from financing activities:					
Net intercompany borrowings	9,818	156	(1,343)	(8,631)	—
Proceeds from long-term borrowings	28,793	—	—	—	28,793
Repayment of debt	(16,400)	—	(400)	—	(16,800)
Other borrowings	986	—	255	—	1,241
Dividend and distribution payments on common stock and exchangeable limited partnership units	(4,235)	—	—	—	(4,235)
Repurchases of common stock - repurchase program	(5,435)	—	—	—	(5,435)
Shares repurchased for tax withholdings on vesting of equity awards	—	(446)	(526)	—	(972)
Issuance of preferred stock, net	3,679	—	—	—	3,679
Issuance of common stock	253	—	—	—	253
Other	(50)	—	14	—	(36)
Net cash provided by (used in) financing activities	17,409	(290)	(2,000)	(8,631)	6,488
Net change in cash and cash equivalents	374	(1,848)	2,237	—	763
Cash and cash equivalents at beginning of period	—	2,461	1,831	—	4,292
Cash and cash equivalents at end of period	$ 374	$ 613	$ 4,068	$ —	$ 5,055

	Condensed Consolidating Statements of Cash Flows				
	Fiscal Year Ended				
	November 4, 2018				
	Parent Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(In millions)				
Cash flows from operating activities:					
Net income	$ 12,259	$ 12,641	$ 4,266	$ (16,556)	$ 12,610
Adjustments to reconcile net income to net cash provided by (used in) operating activities	(12,323)	(12,893)	4,701	16,785	(3,730)
Net cash provided by (used in) operating activities	(64)	(252)	8,967	229	8,880
Cash flows from investing activities:					
Intercompany contributions paid	—	(9,099)	(3,002)	12,101	—
Distributions received from subsidiaries	—	—	1,521	(1,521)	—
Net change in intercompany loans	—	2,637	(261)	(2,376)	—
Acquisitions of businesses, net of cash acquired	—	—	(4,800)	—	(4,800)
Proceeds from sales of businesses	—	—	773	—	773
Purchases of property, plant and equipment	—	(196)	(497)	58	(635)
Proceeds from disposals of property, plant and equipment	—	55	242	(58)	239
Purchases of investments	—	(50)	(199)	—	(249)
Proceeds from sales of investments	—	54	—	—	54
Other	—	(50)	(6)	—	(56)
Net cash used in investing activities	—	(6,649)	(6,229)	8,204	(4,674)
Cash flows from financing activities:					
Intercompany contributions received	—	3,231	9,099	(12,330)	—
Net intercompany borrowings	8,690	261	(11,327)	2,376	—
Repayment of debt	—	(117)	(856)	—	(973)
Dividend and distribution payments on common stock and exchangeable limited partnership units	(1,477)	(1,521)	(1,521)	1,521	(2,998)
Repurchases of common stock - repurchase program	(7,258)	—	—	—	(7,258)
Shares repurchased for tax withholdings on vesting of equity awards	—	(20)	(36)	—	(56)
Issuance of common stock	109	—	103	—	212
Other	—	(27)	(18)	—	(45)
Net cash provided by (used in) financing activities	64	1,807	(4,556)	(8,433)	(11,118)
Net change in cash and cash equivalents	—	(5,094)	(1,818)	—	(6,912)
Cash and cash equivalents at the beginning of period	—	7,555	3,649	—	11,204
Cash and cash equivalents at end of period	$ —	$ 2,461	$ 1,831	$ —	$ 4,292

	Condensed Consolidating Statements of Cash Flows				
	Fiscal Year Ended				
	October 29, 2017				
	Parent Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)				
Cash flows from operating activities:					
Net income	$ 1,692	$ 1,784	$ 1,601	$(3,293)	$ 1,784
Adjustments to reconcile net income to net cash provided by operating activities	(1,692)	924	2,077	3,458	4,767
Net cash provided by operating activities	—	2,708	3,678	165	6,551
Cash flows from investing activities:					
Intercompany contributions paid	—	—	(40)	40	—
Distributions received from subsidiaries	—	—	1,834	(1,834)	—
Net change in intercompany loans	—	(286)	5,835	(5,549)	—
Acquisitions of businesses, net of cash acquired	—	—	(40)	—	(40)
Proceeds from sales of businesses	—	—	10	—	10
Purchases of property, plant and equipment	—	(254)	(841)	26	(1,069)
Proceeds from disposals of property, plant and equipment	—	25	442	(26)	441
Purchases of investments	—	(200)	(7)	—	(207)
Proceeds from maturities of investments	—	200	—	—	200
Other	—	—	(9)	—	(9)
Net cash provided by (used in) investing activities	—	(515)	7,184	(7,343)	(674)
Cash flows from financing activities:					
Intercompany contributions received	—	205	—	(205)	—
Net intercompany borrowings	—	(5,797)	248	5,549	—
Proceeds from long-term borrowings	—	17,426	—	—	17,426
Repayment of debt	—	(5,704)	(7,964)	—	(13,668)
Dividend and distribution payments on common stock and exchangeable limited partnership units	—	(1,834)	(1,745)	1,834	(1,745)
Issuance of common stock	—	—	257	—	257
Other	—	(26)	(14)	—	(40)
Net cash provided by (used in) financing activities	—	4,270	(9,218)	7,178	2,230
Net change in cash and cash equivalents	—	6,463	1,644	—	8,107
Cash and cash equivalents at beginning of period	—	1,092	2,005	—	3,097
Cash and cash equivalents at end of period	$ —	$ 7,555	$ 3,649	$ —	$ 11,204

16. Subsequent Events

Acquisition of Symantec Corporation's Enterprise Security Business

On November 4, 2019, we completed the purchase and assumption of certain assets and certain liabilities, respectively, of Symantec Corporation's Enterprise Security business for approximately $10.7 billion in cash (the "Symantec Asset Purchase").

We expect to account for the Symantec Asset Purchase as a business combination and are currently evaluating the purchase price allocation. It is not practicable to disclose the preliminary purchase price allocation or unaudited pro forma combined financial information for this transaction, given the short period of time between the acquisition date and the issuance of these consolidated financial statements.

2020 Term Loans

In connection with the Symantec Asset Purchase, we entered into a credit agreement (the "2020 Credit Agreement"), which provides for a $7,750 million unsecured term A-3 facility due November 2022 and a $7,750 million unsecured term A-5 facility due November 2024, collectively referred to as the "2020 Term Loans". The 2020 Credit Agreement has substantially the same representations and warranties, covenants and events of default as the 2019 Credit Agreement. On November 4, 2019, we used $12 billion of the net proceeds from the 2020 Term Loans to fund the Symantec Asset Purchase and related working capital needs. On December 2, 2019, we refinanced our 5.375% notes due December 2019 using $750 million of net proceeds from the 2020 Term Loans. The remaining net proceeds from the 2020 Term Loans of $2,750 million are available to refinance our 2.375% notes due January 2020.

Principal payments of 2.50% of the original aggregate principal amount borrowed on our 2020 Term Loans are due quarterly beginning in March 2020 with the remaining principal due upon the respective maturity dates of our 2020 Term Loans. Interest on our 2020 Term Loans is based on a floating rate and is payable monthly. Our obligations under the 2020 Credit Agreement are guaranteed on an unsecured basis by our subsidiaries, BRCM and BTI.

Preferred Stock Cash Dividends Declared

On December 10, 2019, our Board of Directors declared a quarterly cash dividend of $20.00 per share on our Mandatory Convertible Preferred Stock, payable on December 31, 2019 to stockholders of record on December 15, 2019.

Common Stock Cash Dividends Declared

On December 10, 2019, our Board of Directors declared a quarterly cash dividend of $3.25 per share on our common stock, payable on December 31, 2019 to stockholders of record on December 23, 2019.

Supplementary Financial Data — Quarterly Data (Unaudited)

	Fiscal Quarter Ended							
	November 3, 2019 (1)	August 4, 2019 (2)	May 5, 2019 (3)	February 3, 2019 (4)	November 4, 2018 (5)	August 5, 2018 (6)	May 6, 2018 (7)	February 4, 2018 (8)
	(In millions, except per share data)							
Total net revenue (9)	$ 5,776	$ 5,515	$ 5,517	$ 5,789	$ 5,444	$ 5,063	$ 5,014	$ 5,327
Gross margin	$ 3,152	$ 3,034	$ 3,089	$ 3,208	$ 2,935	$ 2,619	$ 2,551	$ 2,628
Operating income	$ 1,054	$ 865	$ 970	$ 555	$ 1,652	$ 1,339	$ 1,201	$ 943
Income from continuing operations	$ 847	$ 715	$ 693	$ 481	$ 1,115	$ 1,197	$ 3,736	$ 6,581
Loss from discontinued operations, net of income taxes	—	—	(2)	(10)	—	(1)	(3)	(15)
Net income	847	715	691	471	1,115	1,196	3,733	6,566
Dividends on preferred stock	29	—	—	—	—	—	—	—
Net income attributable to noncontrolling interest	—	—	—	—	—	—	15	336
Net income attributable to common stock	$ 818	$ 715	$ 691	$ 471	$ 1,115	$ 1,196	$ 3,718	$ 6,230
Diluted income per share attributable to common stock:								
Income per share from continuing operations	$ 1.97	$ 1.71	$ 1.64	$ 1.15	$ 2.64	$ 2.71	$ 8.34	$ 14.66
Loss per share from discontinued operations	—	—	—	(0.03)	—	—	(0.01)	(0.04)
Net income per share	$ 1.97	$ 1.71	$ 1.64	$ 1.12	$ 2.64	$ 2.71	$ 8.33	$ 14.62
Dividends declared and paid per share	$ 2.65	$ 2.65	$ 2.65	$ 2.65	$ 1.75	$ 1.75	$ 1.75	$ 1.75
Dividends declared and paid per share-full year	$ 10.60				$ 7.00			

(1) Includes amortization of acquisition-related intangible assets of $1,301 million.

(2) Includes amortization of acquisition-related intangible assets of $1,303 million.

(3) Includes amortization of acquisition-related intangible assets of $1,299 million.

(4) Includes the results of CA beginning with the fiscal quarter ended February 3, 2019 in connection with the completion of the CA Merger on November 5, 2018. Also includes amortization of acquisition-related intangible assets of $1,309 million and restructuring, impairment and disposal charges of $629 million.

(5) Includes amortization of acquisition-related intangible assets of $829 million and impairment on investment of $106 million.

(6) Includes amortization of acquisition-related intangible assets of $830 million.

(7) Includes amortization of acquisition-related intangible assets of $832 million.

(8) Includes the results of Brocade beginning with the fiscal quarter ended February 4, 2018 in connection with the completion of the Brocade Merger on November 17, 2017. Also includes amortization of acquisition-related intangible assets of $1,054 million, a purchase accounting effect on inventory charge of $70 million and restructuring, impairment and disposal charges of $145 million.

(9) At the beginning of fiscal year 2019, we adopted Topic 606. Periods prior to fiscal year 2019 are presented in accordance with Accounting Standards Codification 605, Revenue Recognition. Refer to Note 3. “Revenue from Contracts with Customers” included in Part II, Item 8. for additional information on our adoption of Topic 606.

Schedule II — Valuation and Qualifying Accounts

	Balance at Beginning of Period	Additions to Allowances	Charges Utilized/ Write-offs	Balance at End of Period
		(In millions)		
Accounts receivable allowances:				
Distributor credit allowances (1)				
Fiscal year ended November 3, 2019	$ 151	$ 705	$ (703)	$ 153
Fiscal year ended November 4, 2018	$ 177	$ 882	$ (908)	$ 151
Fiscal year ended October 29, 2017	$ 252	$ 1,176	$ (1,251)	$ 177
Other accounts receivable allowances (2)				
Fiscal year ended November 3, 2019	$ 12	$ 99	$ (73)	$ 38
Fiscal year ended November 4, 2018	$ 31	$ 116	$ (135)	$ 12
Fiscal year ended October 29, 2017	$ 40	$ 49	$ (58)	$ 31
Income tax valuation allowances				
Fiscal year ended November 3, 2019	$ 1,347	$ 283	$ (68)	$ 1,562
Fiscal year ended November 4, 2018	$ 1,447	$ 314	$ (414)	$ 1,347
Fiscal year ended October 29, 2017	$ 1,003	$ 460	$ (16)	$ 1,447

____

(1) Distributor credit allowances relate to price adjustments and other allowances.

(2) Other accounts receivable allowances primarily include sales returns and allowance for doubtful accounts.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer (“CEO”) and Chief Financial Officer (“CFO”), evaluated the effectiveness of Broadcom’s disclosure controls and procedures as of November 3, 2019. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of November 3, 2019, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by the Board, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets;

- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of us are being made only in accordance with authorizations of management and directors; and

- 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 financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

Our management assessed the effectiveness of our internal control over financial reporting as of November 3, 2019. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control-Integrated Framework* (2013). Based on this assessment, our management concluded that, as of November 3, 2019, our internal control over financial reporting is effective based on those criteria.

Our evaluation of the effectiveness of our internal control over financial reporting as of November 3, 2019 did not include the internal controls of CA, Inc. ("CA"). We excluded CA from our assessment of internal control over financial reporting as of November 3, 2019 because it was acquired in a business combination in November 2018. CA is a subsidiary of ours whose total assets represented 3% and total revenues represented 15% of the related consolidated financial statement amounts as of and for the year ended November 3, 2019.

The effectiveness of our internal control over financial reporting, as of November 3, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included in Part II, Item 8. of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fourth quarter ended November 3, 2019 that has materially affected, or is 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 regarding our directors, executive officers and compliance with Section 16(a) of the Exchange Act, set forth in the sections entitled “Proposal 1 — Election of Directors,” “Executive Officers,” “Corporate Governance” and “Section 16(a) Beneficial Ownership Reporting Compliance,” in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2019 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

We have adopted a written Code of Ethics and Business Conduct that applies to all of our employees and directors, including our principal executive officer, principal financial officer and principal accounting officer, or persons performing similar functions and have posted it in the “Investors Center — Governance” section of our website, which is located at www.broadcom.com. We intend to satisfy any disclosure requirement under Item 5.05 of Form 8-K regarding any amendments to, or waivers from, our Code of Ethics and Business Conduct by posting such information on our website at the internet address and location above.

ITEM 11. EXECUTIVE COMPENSATION

The information regarding executive compensation required by this Item 11 set forth in the sections entitled “Director Compensation”, “Compensation Discussion and Analysis,” “Executive Compensation,” “Compensation Committee Report” and “Corporate Governance — Compensation Committee Interlocks and Insider Participation" in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2019 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section. However, the Compensation Committee Report included in such definitive Proxy Statement shall not be deemed “filed” with the SEC for the purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing made by us with the SEC, regardless of any general incorporation language in such filing.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information regarding security ownership of certain beneficial owners and management and related stockholder matters required by this Item 12 set forth in the section entitled “Security Ownership of Certain Beneficial Owners, Directors and Executive Officers” and “Equity Compensation Plan Information” in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2019 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information regarding certain relationships, related transactions and director independence required by this Item 13 set forth in the sections entitled “Corporate Governance” and “Certain Relationships and Related Party Transactions” in our definitive

Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2019 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information regarding principal accounting fees and services required by this Item 14 set forth in the proposal relating to the re-appointment of our independent registered public accounting firm in our definitive Proxy Statement for our 2020 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2019 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

Table of Contents

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The following consolidated financial statements are included in Item 8 of this Annual Report on Form 10-K:

2. Financial Statement Schedules

The financial statement schedule of the Registrant and its subsidiaries for fiscal years 2019, 2018 and 2017 required by Item 15(a) (Schedule II, Valuation and Qualifying Accounts) is included in Item 8 of this Annual Report on Form 10-K:

Schedules not filed have been omitted because they are not applicable, are not required or the information required to be set forth therein is included in the financial statements or notes thereto.

3. Exhibits

The documents set forth below are filed herewith or incorporated by reference to the location indicated.

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
2.1#	Agreement and Plan of Merger, dated May 28, 2015, by and among Pavonia Limited, Avago Technologies Limited, Safari Cayman L.P., Avago Technologies Cayman Holdings Ltd., Avago Technologies Cayman Finance Limited, Buffalo CS Merger Sub, Inc., Buffalo UT Merger Sub, Inc. and Broadcom Corporation.	Avago Technologies Limited Current Report on Form 8-K (Commission File No. 001-34428)	May 29, 2015	
2.2	Amendment No. 1 to Agreement and Plan of Merger, dated July 29,	Avago Technologies Limited Current Report	July 31, 2015	

	2015, by and between Avago Technologies Limited and Broadcom Corporation.	on Form 8-K (Commission File No. 001-34428)	
2.3#	Agreement and Plan of Merger, dated November 2, 2016, by and among Brocade Communications Systems, Inc., Broadcom Limited, Broadcom Corporation and Bobcat Merger Sub, Inc.	Broadcom Limited Current Report on Form 8-K/A (Commission File No. 001-37690)	November 2, 2016
2.4#	Agreement and Plan of Merger, dated as of July 11, 2018, by and among Broadcom, Inc., Collie Acquisition Corp. and CA, Inc.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	July 12, 2018

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
2.5#	Asset Purchase Agreement, dated as of August 8, 2019, by and between Broadcom Inc. and Symantec Corporation.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	August 9, 2019	
3.1	Amended and Restated Certificate of Incorporation.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
3.2	Certificate of Designation of the 8.00% Mandatory Convertible Preferred Stock, Series A.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2019	
3.3	Amended and Restated Bylaws.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
4.1	Form of Common Stock Certificate.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 14, 2018	
4.2	Form of Certificate of the 8.00% Mandatory Convertible Preferred Stock, Series A (included in Exhibit 3.2).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	September 30, 2019	
4.3	Description of Common Stock			X
4.4	Description of 8.00% Mandatory Convertible Preferred Stock, Series A			X
4.5	Indenture, dated as of January 19, 2017, by and among the Broadcom Corporation and Broadcom Cayman Finance Limited (“Co-Issuers”), the Company, Broadcom Cayman L.P., and BC Luxembourg S.à r.l. (the “Guarantors”) and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.6	Supplement Indenture to the January 2017 Indenture, dated as of April 9, 2018.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 9, 2018	
4.7	Second Supplement Indenture to the January 2017 Indenture, dated as of January 25, 2019.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	January 25, 2019	
4.8	Form of 2.375% Senior Note due 2020 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.9	Form of 3.000% Senior Note due 2022 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form	January 20, 2017	

		8-K (Commission File No. 001-37690)	
4.10	Form of 3.625% Senior Note due 2024 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017
4.11	Form of 3.875% Senior Note due 2027 (included in Exhibit 4.5).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017
4.12	Indenture, dated as of October 17, 2017, by and among the Co-Issuers, the Company and Broadcom Cayman L.P., (the "October Guarantors") and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017
4.13	Supplement Indenture to October 2017 Indenture, dated as of April 9, 2018.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	April 9, 2018
4.14	Second Supplement Indenture to October 2017 Indenture, dated as of January 25, 2019.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-38449)	January 25, 2019

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
4.15	Form of 2.200% Senior Note due 2021 (included in Exhibit 4.12).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.16	Form of 2.650% Senior Note due 2023 (included in Exhibit 4.12).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.17	Form of 3.125% Senior Note due 2025 (included in Exhibit 4.12).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.18	Form of 3.500% Senior Note due 2028 (included in Exhibit 4.12).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.19	Indenture, dated as of April 5, 2019, by and among the Company, the Guarantors and Wilmington Trust, National Association, as trustee.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 5, 2019	
4.20	Form of 3.125% Senior Note due 2021 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 5, 2019	
4.21	Form of 3.125% Senior Note due 2022 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 5, 2019	
4.22	Form of 3.625% Senior Note due 2024 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 5, 2019	
4.23	Form of 4.250% Senior Note due 2026 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 5, 2019	
4.24	Form of 4.750% Senior Note due 2029 (included in Exhibit 4.19).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 5, 2019	
4.25	Registration Rights Agreement, dated as of April 5, 2019, by and among the Company, the Guarantors and Merrill Lynch, Pierce, Fenner & Smith Incorporated and J.P. Morgan Securities LLC, as representatives of the several initial purchasers of the April 2019 Notes.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 5, 2019	
10.1				

	Form of Indemnification and Advancement Agreement (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018
10.2	Form of Indemnification Agreement (Directors) (effective June 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	June 9, 2016
10.3	Form of Indemnification Agreement (Officers) (effective June 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	June 9, 2016
10.4	Form of Indemnification Agreement (Directors) (effective February 1, 2016).	Broadcom Limited Current Report on Form 8-K12B (Commission File No. 001-37690)	February 2, 2016
10.5	Form of Indemnification Agreement (Directors) (effective prior to February 1, 2016).	Avago Technologies Limited Quarterly Report on Form 10-Q (Commission File No. 001-34428)	September 13, 2013
10.6	Form of Indemnification Agreement (Officers) (effective prior to February 1, 2016).	Avago Technologies Finance Pte. Ltd. Amendment No. 1 to Annual Report on Form 20-F/A (Commission File No. 333-137664)	February 27, 2008

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.7	Credit Agreement, dated as of May 7, 2019, among Broadcom Inc., the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	May 7, 2019	
10.8	Credit Agreement, dated as of November 4, 2019, among Broadcom Inc., the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	November 4, 2019	
10.9	Sublease Agreement, dated June 5, 2009, between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Limited Registration Annual Report on Form 10-K (Commission File No. 001-33428)	December 15, 2010	
10.10	Amendments of Sublease Agreement between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at 1 Yishun Avenue 7 Singapore 768923.	Avago Technologies Limited Registration Annual Report on Form 10-K (Commission File No. 001-33428)	December 17, 2015	
10.11	Amendment No. 3 of Sublease Agreement between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at 1 Yishun Avenue 7 Singapore 768923.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.12	Lease No. I/33183P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1935X of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49501Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006	
10.13	Lease No. I/31607P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1937C of Mukim 19, dated September 26, 2000, and includes the Variation of	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006	

	Lease I/49499Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.		
10.14	Lease No. I/33182P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 2134N of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49500Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006
10.15	Lease No. I/33160P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1975P of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49502Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006
10.16	Lease Agreement dated August 10, 2017 between Five Point Office Venture I, LLC and Broadcom Corporation.	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
10.17*	Settlement and Patent License and Non-Assert Agreement by and between Qualcomm Incorporated and Broadcom Corporation.	Broadcom Corporation Current Report on Form 8-K/A (Commission File No. 000-23993)	July 23, 2009	
10.18+	Avago Technologies Limited 2009 Equity Incentive Award Plan.	Avago Technologies Limited Registration Statement on Form S-1 (Commission File No. 333-153127)	July 27, 2009	
10.19+	Second Amended and Restated Employee Stock Purchase Plan.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	February 2, 2016	
10.20+	Amendment to Broadcom Limited Second Amended and Restated Employee Stock Purchase Plan.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.21+	LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-195741)	May 6, 2014	
10.22+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.23+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.24+	Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	January 29, 2015	
10.25+	Amendment to the Broadcom Corporation 2012 Stock Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.26+	Amendment to the Broadcom Corporation 2012 Stock Incentive Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.27+	Broadcom Corporation 1998 Stock Incentive Plan, as amended and restated November 11, 2010.	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	February 2, 2011	
10.28+	Amendment to the Broadcom Corporation 1998 Stock Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.29+				

	Brocade Communication Systems, Inc. 2009 Stock Plan, as amended and restated April 11, 2017.	Brocade Communication Systems, Inc. Current Report on Form 8-K (Commission File No. 000-25601)	April 12, 2017
10.30+	Amendment to the Brocade Communication Systems, Inc. 2009 Stock Plan (effective November 17, 2017).	Broadcom Limited Registration Statement on Form S-8 (Commission File No. 333-221654)	November 11, 2017
10.31+	Amendment to the Brocade Communication Systems, Inc. 2009 Stock Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-12B (Commission File No. 001-38449)	April 4, 2018
10.32+	Brocade Communications Systems, Inc. Amended and Restated Inducement Award Plan, effective as of May 24, 2016.	Brocade Communication Systems, Inc. Post-Effective Amendment No. 1 to Form S-4 on Form S-8 Registration Statement (Commission File No. 333-211823)	June 3, 2016
10.33+	Amendment to the Brocade Communication Systems, Inc. Amended and Restated Inducement Award Plan (effective November 17, 2017).	Broadcom Limited Registration Statement on Form S-8 (Commission File No. 333-221654)	November 11, 2017

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.34+	Amendment to the Brocade Communication Systems, Inc. Amended and Restated Inducement Award Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.35+	CA, Inc. 2011 Incentive Plan, as amended and restated as of November 5, 2018.	Broadcom Inc. Registration Statement on Form S-8 (Commission File No. 333-228175	November 5, 2018	
10.36+	Form of Annual Bonus Plan for Executive Employees.	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.37+	Form of Option Agreement Under Avago Technologies Limited 2009 Equity Incentive Award Plan.	Amendment No. 5 to Avago Technologies Limited Registration Statement on Form S-1 (Commission File No. 333-153127)	July 27, 2009	
10.38+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan.	Avago Technologies Limited Quarterly Report on Form 10-Q (Commission File No. 001-34428)	June 7, 2013	
10.39+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.40+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.41+	Form of Restricted Stock Unit Award Agreement under Avago Technologies Limited 2009 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.42+	Form of Restricted Stock Unit Award Agreement under Avago Technologies Limited 2009 Equity Incentive Plan (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018	
10.43+	Form of Agreement for Multi-Year Equity Award of Restricted Stock Unit Award under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	December 6, 2018	
10.44+				

	Form of Performance Stock Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Award Plan.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 9, 2017
10.45+	Form of Performance Share Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective March 13, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018
10.46+	Form of Performance Share Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018
10.47+	Form of Performance Stock Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018
10.48+	Form of Agreement for Multi-Year Equity Award of Performance Stock Units under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	December 6, 2018

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.49+	Form of Option Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-196438)	June 2, 2014	
10.50+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-196438)	June 2, 2014	
10.51+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.52+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.53+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective April 4 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018	
10.54+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018	
10.55+	Broadcom Corporation Amended and Restated Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	April 24, 2014	
10.56+	Amendment to Broadcom Corporation Amended and Restated Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	July 30, 2015	
10.57+	Form of Restricted Stock Unit Issuance Agreement for executive officers under the Broadcom Corporation 2012 Stock Incentive Plan (for RSUs governed by the RSU Incentive Award Program (3 year cliff vesting)).	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	January 30, 2014	
10.58+	Form of Award Letter under the Broadcom Corporation Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	April 24, 2014	
10.59+	Form of Restricted Stock Unit Award Agreement under Broadcom	Broadcom Limited Quarterly Report on	March 10, 2016	

	Corporation 2012 Stock Incentive Plan (effective February 1, 2016).	Form 10-Q (Commission File No. 001-37690)		
10.60+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.61+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018	
10.62+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018	
10.63+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective December 6, 2019).			X

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.64+	Form of Agreement for Multi-Year Equity Award of Restricted Stock Units under the Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	December 6, 2018	
10.65+	Form of Performance Stock Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 9, 2017	
10.66+	Form of Performance Share Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective March 15, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018	
10.67+	Form of Performance Share Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018	
10.68+	Form of Performance Stock Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective December 5, 2018).	Broadcom Inc. Annual Report on Form 10-K (Commission File No. 001-38449)	December 21, 2018	
10.69+	Form of Agreement for Multi-Year Equity Award of Performance Stock Units under the Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	December 6, 2018	
10.70+	Form of Performance Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective December 6, 2019).			X
10.71+	Performance Stock Unit Award Agreement, dated June 15, 2016, between Broadcom Limited and Hock E. Tan.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	June 16, 2016	
10.72+	Performance Stock Unit Award Agreement, dated June 15, 2017, between Broadcom Limited and Hock E. Tan.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	June 19, 2017	
10.73+	Policy on Acceleration of Executive Staff Equity Awards in the Event of Permanent Disability.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	March 15, 2019	
10.74+	Policy on Acceleration of Equity Awards in the Event of Death.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	March 15, 2019	

10.75+	Severance Benefits Agreement, dated January 23, 2014, between Avago Technologies Limited and Hock E. Tan.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018
10.76+	Severance Benefits Agreement, dated October 17, 2016, between Broadcom Limited and Thomas H. Krause, Jr.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018
10.77+	Severance Benefits Agreement, dated June 3, 2015, between Avago Technologies Limited and Charlie Kawwas.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018
10.78+	Severance Benefits Agreement, dated September 26, 2017, between Broadcom Limited and Mark Brazeal.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018
10.79+	Transition and Separation Agreement, dated as of September 11, 2019, by and between Broadcom Inc. and Bryan T. Ingram.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	September 13, 2019
10.80+	Continuing Employment Offer Letter, dated June 3, 2015, between Avago Technologies Limited and Charlie Kawwas.	Avago Technologies Limited Quarterly Report on Form 10-Q (Commission File No. 001-34428)	June 10, 2015

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
21.1	List of Subsidiaries.			X
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.			X
24.1	Power of Attorney (see signature page to this Form 10-K).			X
31.1	Certification of Principal Executive Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			X
31.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			X
32.1	Certification of Principal Executive Officer of Broadcom Inc. Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			X
32.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			X
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.			X
101.SCH	XBRL Schema Document			X
101.CAL	XBRL Calculation Linkbase Document			X
101.DEF	XBRL Definition Linkbase Document			X
101.LAB	XBRL Labels Linkbase Document			X
101.PRE	XBRL Presentation Linkbase Document			X
104	Cover Page Interactive Data File - the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.			X

Notes:

\+ Indicates a management contract or compensatory plan or arrangement.

Schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Broadcom Inc. hereby undertakes to furnish supplementally copies of any omitted schedules upon request by the SEC.

* Certain information omitted pursuant to a request for confidential treatment filed with the SEC.

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.

BROADCOM INC.

By: **/s/ Hock E. Tan**

Name: Hock E. Tan

Title: President and Chief Executive Officer

Date: December 20, 2019

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Hock E. Tan, Thomas H. Krause, Jr., Mark D. Brazeal and Kirsten M. Spears, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the Registrant in the capacities indicated and on the dates indicated.

Signature	Title	Date
/s/ Hock E. Tan **Hock E. Tan**	President and Chief Executive Officer and Director (Principal Executive Officer)	December 20, 2019
/s/ Thomas H. Krause, Jr. **Thomas H. Krause, Jr.**	Chief Financial Officer (Principal Financial Officer)	December 20, 2019
/s/ Kirsten M. Spears **Kirsten M. Spears**	Principal Accounting Officer	December 20, 2019
/s/ Henry Samueli **Henry Samueli**	Chairman of the Board of Directors	December 20, 2019
/s/ Eddy W. Hartenstein **Eddy W. Hartenstein**	Lead Independent Director	December 20, 2019
/s/ Diane M. Bryant **Diane M. Bryant**	Director	December 20, 2019
/s/ Gayla J. Delly **Gayla J. Delly**	Director	December 20, 2019
/s/ Check Kian Low **Check Kian Low**	Director	December 20, 2019
/s/ Peter J. Marks **Peter J. Marks**	Director	December 20, 2019
/s/ Justine F. Page **Justine F. Page**	Director	December 20, 2019
/s/ Harry L. You **Harry L. You**	Director	December 20, 2019

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, DC 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 November 4, 2018
	OR
☐	**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
	For the transition period from to

State or Other Jurisdiction of Incorporation or Organization	**Broadcom Inc.**	**Commission File Number**	**IRS Employer Identification No.**
Delaware	**1320 Ridder Park Drive San Jose, California (408) 433-8000**	001-38449	35-2617337
	Exact Name of Registrant as Specified in Its Charter Address of Principal Executive Offices Registrant's telephone number, including area code		

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

Title of Class	**Name of Each Exchange on Which Registered**
Common Stock, $0.001 par value	The NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None
(Title of class)

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post 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, a 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 ☑

State the aggregate market value of voting and non-voting common equity held by non-affiliates as of the last business day of the registrant's most recently completed second fiscal quarter: As of May 6, 2018, the aggregate market value of registrant's common stock held by non-affiliates (based upon the closing sale price of such shares on The Nasdaq Global Select Market on May 4, 2018, the last trading day prior to the registrant's fiscal quarter end) was approximately $97.8 billion.

As of November 30, 2018, the registrant had 407,270,901 shares of its common stock, $0.001 par value per share, outstanding.

Documents Incorporated by Reference

Information required in response to Part III of this Annual Report on Form 10-K is hereby incorporated by reference from the registrant's definitive Proxy Statement for its 2019 Annual Meeting of Stockholders. Except as expressly incorporated by reference, the registrant's Proxy Statement shall not be deemed to be a part of this Annual Report on Form 10-K. The registrant intends to file its definitive Proxy Statement within 120 days after its fiscal year ended November 4, 2018.

BROADCOM INC.
2018 ANNUAL REPORT ON FORM 10-K

TABLE OF CONTENTS

PART I

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws and particularly in Item 1: "Business," Item 1A: "Risk Factors," Item 3: "Legal Proceedings" and Item 7: "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Annual Report on Form 10-K. These statements are indicated by words or phrases such as "anticipate," "expect," "estimate," "seek," "plan," "believe," "could," "intend," "will," and similar words or phrases. These forward-looking statements may include projections of financial information; statements about historical results that may suggest trends for our business; statements of the plans, strategies, and objectives of management for future operations; statements of expectation or belief regarding future events (including any acquisitions we may make), technology developments, our products, product sales, expenses, liquidity, cash flow and growth rates, or enforceability of our intellectual property rights; and the effects of seasonality on our business. Such statements are based on current expectations, estimates, forecasts and projections of our or industry performance and macroeconomic conditions, based on management's judgment, beliefs, current trends and market conditions, and involve risks and uncertainties that may cause actual results to differ materially from those contained in the forward-looking statements. We derive most of our forward-looking statements from our operating budgets and forecasts, which are based upon many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results. Accordingly, we caution you not to place undue reliance on these statements. Important factors that could cause actual results to differ materially from our expectations are disclosed under "Risk Factors" in Part I, Item 1A of this Annual Report on Form 10-K. These factors include risks associated with: our acquisition of CA, Inc., or CA, including 1) potential difficulties in employee retention, (2) unexpected costs, charges or expenses, and (3) our ability to successfully integrate CA's business and achieve the anticipated benefits of the transaction; any loss of our significant customers and fluctuations in the timing and volume of significant customer demand; our dependence on contract manufacturing and outsourced supply chain; our dependency on a limited number of suppliers; any acquisitions we may make, including integrating acquired companies with our existing businesses and our ability to achieve the growth prospects and synergies expected by such acquisitions; our ability to accurately estimate customers' demand and adjust our manufacturing and supply chain accordingly; our significant indebtedness, including the additional indebtedness that we incurred in connection with the CA acquisition and the need to generate sufficient cash flows to service and repay such debt; dependence on and risks associated with distributors of our products; dependence on senior management; quarterly and annual fluctuations in our operating results; global economic conditions and concerns; the frequency of our stock repurchases; cyclicality in the semiconductor industry or in our target markets; our competitive performance and ability to continue achieving design wins with our customers, as well as the timing of any design wins; prolonged disruptions of our or our contract manufacturers' manufacturing facilities or other significant operations; our ability to improve our manufacturing efficiency and quality; our dependence on outsourced service providers for certain key business services and their ability to execute to our requirements; our ability to maintain or improve gross margin; our ability to protect our intellectual property and the unpredictability of any associated litigation expense; compatibility of our software products with operating environments, platforms or third-party products; our ability to enter into satisfactory software license agreements; sales to our government clients; availability of third party software used in our products; use of open source code sources in our products; any expense or reputational damage associated with resolving customer product warranty and indemnification claims; our ability to sell to new types of customers and to keep pace with technological advances; market acceptance of the end products into which our products are designed; our ability to protect against a breach of security systems; fluctuations in foreign exchange rates; our overall cash tax costs, legislation that may impact our overall cash tax costs and our ability to maintain tax concessions in certain jurisdictions; our redomiciliation of our ultimate parent company to the United States; and other events and trends on a national, regional and global scale, including those of a political, economic, business, competitive and regulatory nature. All of the forward-looking statements in this Annual Report on Form 10-K are qualified in their entirety by reference to the factors listed above and those discussed under the heading "Risk Factors" in Part I, Item 1A of this Annual Report on Form 10-K. We caution you that the foregoing list of important factors may not contain all of the material factors that are important to you. In addition, in light of these risks and uncertainties, the matters referred to in the forward-looking statements contained in this Annual Report on Form 10-K may not in fact occur. We undertake no intent or obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as otherwise required by law.

Financial information and results of operations presented relate to (1) Broadcom Inc. for the periods after April 4, 2018 , (2) Broadcom Limited, our predecessor, for the period from February 1, 2016 to April 4, 2018, and (3) Avago Technologies Limited, predecessor to Broadcom Limited, for periods prior to February 1, 2016. Similarly, unless stated otherwise or the context otherwise requires, references to "Broadcom," "we," "our" and "us" mean Broadcom Inc. and its consolidated subsidiaries after April 4, 2018 and, prior to that time, our predecessors. Our fiscal year ends on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. We refer to our fiscal years by the calendar year in which they end. For example, the fiscal year ended November 4, 2018 is referred to as "fiscal year 2018", and was a 53-week year.

Table of Contents

ITEM 1. BUSINESS

Overview

Broadcom Inc., or Broadcom, is the successor to Broadcom Limited, a company organized under the laws of the Republic of Singapore, or Broadcom-Singapore, as a result of our redomiciliation to the United States on April 4, 2018. We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Our over 50-year history of innovation dates back to our diverse origins from Hewlett-Packard Company, AT&T, LSI Corporation, or LSI, Broadcom Corporation, or BRCM, Brocade Communications Systems LLC, or Brocade, and CA, Inc., or CA. Over the years, we have assembled a large team of semiconductor and software design engineers around the world. We maintain design, product and software development engineering resources at locations in the U.S., Asia, Europe and Israel, providing us with engineering expertise worldwide. We strategically focus our research and development resources to address niche opportunities in our target markets and leverage our extensive portfolio of U.S. and other patents and other intellectual property, or IP, to integrate multiple technologies and create system-on-chip, or SoC, component and software solutions that target growth opportunities. We design products and software that deliver high-performance and provide mission-critical functionality.

We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor, or CMOS, based devices and analog III-V based products. We have a history of innovation in the semiconductor industry and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. We differentiate ourselves through our high performance design and integration capabilities and focus on developing products for target markets where we believe we can earn attractive margins.

Semiconductors are made by imprinting a network of electronic components onto a semiconductor wafer. These devices are designed to perform various functions such as processing, amplifying and selectively filtering electronic signals, controlling electronic system functions and processing, and transmitting and storing data. Our digital and mixed signal products are based on silicon wafers with CMOS transistors offering fast switching speeds and low power consumption, which are both critical design factors for the markets we serve. We also offer analog products, which are based on III-V semiconductor materials that have higher electrical conductivity than silicon, and thus tend to have better performance characteristics in radio frequency, or RF, and optoelectronic applications. III-V refers to elements from the 3rd and 5th groups in the periodic table of chemical elements. Examples of these materials used in our products are gallium arsenide, or GaAs, gallium nitride, and indium phosphide, or InP. We also offer mission critical fibre channel storage area networking, or FC SAN, products and related software that we acquired with Brocade in the form of modules, switches and subsystems incorporating multiple semiconductor products.

Original equipment manufacturers, or OEMs, or their contract manufacturers, and distributors typically account for the substantial majority of our semiconductor sales. We have established strong relationships with leading OEM customers across multiple target markets. Many of our major customer relationships have been in place for many years and have often been built as a result of years of collaborative product development. This has enabled us to build our IP portfolio and develop critical expertise regarding our customers' requirements, including substantial system level knowledge. This collaboration has provided us with key insights into our customers' businesses and has enabled us to be more efficient and productive and to better serve our target markets and customers. We have a direct sales force focused on supporting large OEMs. We also distribute a substantial portion of our products through our broad distribution network, and a significant amount of these sales are to large global electronic components distributors.

We focus on maintaining an efficient global supply chain and a variable, low-cost operating model. Accordingly, we outsource a majority of our manufacturing operations, utilizing third-party foundry and assembly and test capabilities, as well as some of our corporate infrastructure functions. We focus our internal fabrication capacity and capital expenditures on products utilizing our innovative and proprietary processes, to protect our IP and to accelerate time to market of our products, while outsourcing commodity processes such as standard CMOS. We also have a long history of operating in Asia, where approximately 38% of our employees are located and where we manufacture and source the majority of our products and materials. Our presence in Asia places us in close proximity to many of our customers' manufacturing facilities and at the center of worldwide electronics manufacturing.

In addition, the software solutions we acquired with CA enable customers to plan, develop, automate, manage and secure applications across mainframe, distributed, mobile and cloud platforms. Many of the largest companies in the world, including most of the Fortune 500 and many government agencies, rely on CA software to help manage and secure their on-premise and hybrid cloud environments. Our portfolio of mainframe and enterprise software solutions enables customers to leverage the benefits of agility, automation, insights and security in managing business processes and technology investments.

Table of Contents

Recent Developments

Acquisition of CA, Inc.

On November 5, 2018, we acquired CA for approximately $18.8 billion in cash, in exchange for all shares of CA common stock issued and outstanding immediately prior to the closing, and assumed $2.25 billion of outstanding unsecured bonds, or the CA Merger. In addition, we assumed all unvested CA stock options, outstanding restricted stock awards, restricted stock units and performance stock units held by continuing employees. All vested in-the-money CA stock options and director stock units were cashed out upon the completion of the CA Merger. We financed the CA Merger with $18 billion in new term loans, as well as cash on hand of the combined companies.

CA was a leading provider of information technology, or IT, management software and solutions. We acquired CA to enhance our infrastructure software capabilities to include mission critical mainframe and enterprise software solutions. The completion of the CA Merger is a key step in strategically developing our business from being predominately a semiconductor solutions provider to being a broad-based infrastructure technology provider focused on mission critical technology. As part of this development, we plan to change the CA business strategy to focus on renewing contracts for mission critical software with existing core, mainframe-centric clients, and expanding the adoption of other existing CA enterprise software offerings with these clients. We also intend to change CA's enterprise software contracting model for core customers from a perpetual per seat license arrangement to an enterprise-wide license model. These contracts will provide for termination thereof by our customers at any time for any reason. As a result, we will recognize revenue from these contracts ratably over time.

The mainframe software solutions we acquired include solutions for the IBM Z® mainframe platform, which runs many of our largest customers' mission critical business applications. These software products help customers improve economics by increasing throughput and lowering cost per transaction, increasing business agility through DevOps tooling and processes, increasing reliability and availability of operations through machine intelligence and automation solutions, and protecting enterprise data with security and compliance.

In addition, we acquired enterprise software solutions that enable large global organizations to transform to digital businesses by providing an end-to-end digital infrastructure management platform that delivers speed, agility and the ability to optimize for risk across multi-cloud hybrid environments and workloads. More specifically, these products offer unique solutions that help with application development, testing and deployment, operations and automation, and securing users and access to IT infrastructure and applications.

In connection with the CA Merger, we entered into a definitive agreement to sell Veracode, Inc., a wholly-owned subsidiary of CA and provider of application security testing solutions, to Thoma Bravo, LLC for an aggregate purchase price of $950 million, subject to customary closing conditions.

Redomiciliation to the United States from Singapore

After the close of market trading on April 4, 2018, Broadcom and Broadcom-Singapore completed a statutory scheme of arrangement under Singapore law pursuant to which all Broadcom-Singapore outstanding ordinary shares were exchanged on a one-for-one basis for newly issued shares of Broadcom common stock and Broadcom-Singapore became an indirect wholly-owned subsidiary of Broadcom, or the Redomiciliation Transaction.

In conjunction with the Redomiciliation Transaction, all outstanding exchangeable limited partnership units of Broadcom Cayman L.P., or the Partnership, a subsidiary of Broadcom-Singapore, were mandatorily exchanged on a one-for-one basis for newly issued shares of Broadcom common stock. As a result, all the limited partners became common stockholders of Broadcom and Broadcom-Singapore redeemed all related outstanding special preference shares. Consequently, the limited partners no longer held a noncontrolling interest in the Partnership and we subsequently deregistered the Partnership.

Acquisition of Brocade

On November 17, 2017, we acquired Brocade for approximately $5.3 billion in cash and paid $701 million to retire Brocade's term loan, or the Brocade Merger. Brocade was a leading supplier of networking hardware, software and services, including FC SAN solutions and Internet Protocol Networking, or IP Networking, solutions. In connection with the Brocade Merger, we incurred $4.0 billion of indebtedness.

Following the Brocade Merger, on December 1, 2017, we sold Brocade's IP Networking business, including the Ruckus Wireless and ICX Switch businesses, to ARRIS International plc for cash consideration of $800 million, before contractual working capital adjustments.

Segment Reporting

Through our fiscal year ended November 4, 2018, or fiscal year 2018, we had four reportable segments: wired infrastructure, wireless communications, enterprise storage, and industrial & other. Beginning in the fiscal year ending November 3, 2019, or fiscal year 2019, as a result of CA Merger that closed on November 5, 2018, the first day of our fiscal

Table of Contents

year 2019, we will have three reportable segments: semiconductor solutions, infrastructure software and IP licensing. Our semiconductor solutions segment will include all our product lines discussed below under “Products and Markets”, except for those related to our FC SAN business that we acquired with Brocade. Our infrastructure software segment will include our FC SAN business and the CA mainframe and enterprise software solutions.

All discussions and information in this Annual Report on Form 10-K regarding our business and financial results relate solely to our operations prior to the CA Merger, unless otherwise indicated.

Products and Markets

Our product portfolio ranges from discrete devices to complex sub-systems that include multiple device types and may also incorporate firmware for interfacing between analog and digital systems. In some cases, our products include mechanical hardware that interfaces with optoelectronic or capacitive sensors. We focus on markets that require high quality and the technology leadership and integrated performance characteristic of our products. For fiscal year 2018, net revenue included contributions from Brocade commencing on November 17, 2017, which are primarily included in the enterprise storage segment. For the fiscal year ended October 30, 2016, or fiscal year 2016, net revenue included contributions from BRCM commencing on February 1, 2016, which are included in the wired infrastructure and wireless communications segments.

See discussion in the “Results of Operations” section included in Part II, Item 7. *Management’s Discussion and Analysis of Financial Condition and Results of Operations* and Note 11. “Segment Information” included in Part II, Item 8. *Financial Statements and Supplementary Data,* of this Annual Report on Form 10-K for additional segment information.

The table below presents the major product families and their major applications in our reportable segments during fiscal year 2018.

Segment	Major Applications	Major Product Families
Wired Infrastructure	• Set-top Box (STB) and Broadband Access	• STB SoCs
		• Cable, digital subscriber line (DSL) and passive optical networking (PON) central office/consumer premise equipment (CO/CPE) SoCs
	• Data center, Telecom, Enterprise and Embedded Networking	• Ethernet switching and routing application specific standard product (ASSP)
		• Embedded processors and controllers
		• Serializer/Deserializer (SerDes), application specific integrated circuits (ASICs)
		• Optical and copper, physical layer (PHYs)
		• Fiber optic laser and receiver components
Wireless Communications	• Mobile handsets	• RF front end modules (FEMs), filters, power amplifiers
		• Wi-Fi, Bluetooth, global positioning system/global navigation satellite system (GPS/GNSS) SoCs
		• Custom touch controllers
Enterprise Storage	• Servers and storage systems	

		• Serial attached small computer system interface (SAS) and redundant array of independent disks (RAID) controllers and adapters
		• Peripheral component interconnect express (PCIe) switches
		• Fibre channel host bus adapters (HBA)
		• Fibre channel switches
	• Hard disk drives (HDD); Solid state drives (SSD)	• Read channel based SoCs; Custom flash controllers
		• Preamplifiers
Industrial & Other	• Power isolation, power conversion and renewable energy systems	• Optocouplers
	• Factory automation, in-car infotainment and renewable energy systems	• Industrial fiber optics
	• Motor controls and factory automation	• Motion control encoders and subsystems
	• Displays and lighting	• Light emitting diode (LEDs)

Table of Contents

Wired Infrastructure Segment. We provide semiconductor solutions for enabling the STB and broadband access markets. We also provide a wide variety of semiconductor solutions which manage the movement of data in data center, telecom, enterprise and SMB/ROBO networking applications.

Set-Top Box Solutions: We offer complete SoC platform solutions for cable, satellite, Internet Protocol, over-the-top and terrestrial STBs. Our products enable global service providers to introduce new and enhanced technologies and services in STBs, including transcoding, digital video recording functionality, higher definition, increased networking capabilities, and more tuners to enable faster channel change and more simultaneous recordings. We are also enabling service providers in deploying High Efficiency Video Coding, or HEVC, a video compression format that is a successor to the H.264/MPEG-4 format. HEVC enables ultra-high definition, or Ultra HD, services by effectively doubling the capacity of existing networks to deploy new or existing content. Our families of STB solutions support the complete range of resolutions, from standard definition, to high definition, and Ultra HD.

Broadband Access Solutions: We offer complete SoC platform solutions for DSL, cable and fiber for both central office deployments and CPE. For CPE deployments, we support broadband modems, wireless local area network, routers as well as residential gateway solutions. For central office deployment, our solutions include cable modem termination systems, for cable, optical line termination, for fiber, and DSL Access Multiplexer for DSL. Our products enable global service providers to continue to deploy next generation broadband access technologies across multiple standards, including DSL, cable and fiber, to provide more bandwidth and faster speeds to consumers. Over the coming years, we expect to see global service providers moving toward new technologies, including data over cable service interface specification 3.1 for cable modem technologies, G.Fast for DSL, and deploying more fiber-based solutions to increase speeds and bandwidth for customers.

Ethernet Switching & Routing: Ethernet is a ubiquitous interconnection technology that enables high performance and cost effective networking infrastructure. We offer a broad set of Ethernet switching and routing products that are optimized for data center implementations, service provider networks, enterprise networks, and embedded networks. In the data center market, our high capacity, low latency, switching silicon supports advanced protocols around virtualization and multi-pathing. Our Ethernet switching fabric technologies provide the ability to build highly scalable flat networks supporting tens of thousands of servers. Our service provider switch portfolio enables carrier/service provider networks to support a large number of services in the wireless backhaul, access, aggregation and core of their networks. For enterprise networks and embedded ethernet applications, we offer product families that combine multi-layer switching capabilities and support lower power modes that comply with industry standards around energy efficient Ethernet.

Embedded Processors & Controllers: Our embedded processors leverage our ARM central processing unit and Ethernet switching technology to deliver SoCs for high performance embedded applications in a wide range of communication products such as voice-over-internet-protocol, telephony, point-of-sale devices and enterprise and retail access points and gateways. We offer a range of knowledge-based processors to enable high-performance decision-making for packet processing in a variety of advanced devices in the enterprise, metro, access, edge and core networking spaces. We also offer a range of Ethernet controllers for servers and workstations supporting multiple generations of Ethernet technology.

SerDes ASICs: For data center and enterprise networking, and high performance computing (HPC) applications, we supply high speed SerDes technology integrated into ASICs. These ASICs are custom products built to individual customers specifications. Our ASICs are designed on advanced CMOS process technologies, focused primarily on leading edge geometries.

Physical Layer Devices: These devices, also referred to as PHYs, are transceivers which enable the reception and transmission of Ethernet data packets over a physical medium such as copper wire or optical fibers. Our high performance Ethernet transceivers are built upon a proprietary digital signal processing communication architecture optimized for high-speed network connections and support the latest standards and advanced features, such as energy efficient Ethernet, data encryption and time synchronization. We also offer a range of automotive Ethernet products to meet growing consumer demand for in-vehicle connectivity.

Fiber Optic Components: We supply optical laser and receiver components to the Ethernet networking, storage, and access, metro- and long-haul telecommunication markets. Our optical components enable the high speed reception and transmission of data through optical fibers.

Wireless Communications Segment. We support the wireless communications industry with a broad variety of RF semiconductor devices, connectivity solutions and custom touch controllers. Devices incorporating our wireless solutions include mobile handsets and tablets.

RF Semiconductor Devices: Our RF semiconductor devices selectively filter, as well as amplify, RF signals. Filters enable modern wireless communication systems to support a large number of subscribers simultaneously by ensuring that the multiple transmissions and receptions of voice and data streams do not interfere with each other. We were among the first to deliver commercial film bulk acoustic resonator, or FBAR, filters that offer technological advantages over competing filter technologies, to allow mobile handsets to function more efficiently in today's congested RF spectrum. FBAR technology has a significant market share within the cellular handset market. Our RF products include FEMs that incorporate multiple die into multi-function RF devices, duplexers and multiplexers, which are a combination of two or more transmit and receive filters in a single device, using our proprietary FBAR technology, discrete filters and discrete power amplifiers.

Our expertise in FBAR technology, amplifier design, and module integration enables us to offer industry-leading performance in cellular RF transceiver applications. Our proprietary GaAs wafer manufacturing processes are critical to the production of power amplifier and low noise amplifier products.

Connectivity Solutions: Our connectivity solutions include discrete and integrated Wi-Fi and Bluetooth solutions, and location (GPS/GNSS) controllers.

Wi-Fi allows devices on a local area network to communicate wirelessly, adding the convenience of mobility to the utility of high-speed data networks. We offer a family of high performance, low power Wi-Fi chipsets. Bluetooth is a low power technology that enables direct connectivity between devices. We offer a complete family of Bluetooth silicon and software solutions that enable manufacturers to easily and cost-effectively add Bluetooth functionality to virtually any device. These solutions include combination chips that offer integrated Wi-Fi and Bluetooth functionality, which provides significant performance advantages over discrete solutions.

We also offer a family of GPS, assisted-GPS (A-GPS) and GNSS semiconductor products, software and data services. These products are part of a broader location platform that leverages a broad range of communications technologies, including Wi-Fi, Bluetooth and GPS, to provide more accurate location and navigation capabilities.

Custom Touch Controllers: Our touch controllers process signals from touch screens in mobile handsets and tablets.

Enterprise Storage Segment. Our enterprise storage products enable secure movement of digital data to and from host machines such as servers, personal computers and storage systems to the underlying storage devices such as HDDs and SSDs.

Fibre Channel Switch Products: The Fibre Channel switch products we acquired in connection with our acquisition of Brocade provide interconnection, bandwidth, and high-speed switching between servers and storage devices which are in a FC SAN. FC SANs are networks dedicated to mission critical storage traffic, and enable simultaneous high speed and secure connections among multiple host computers and multiple storage arrays.

SAS, RAID & PCIe Products: We provide SAS and RAID controller and adapter solutions to server and storage system OEMs. These solutions enable secure and high speed data transmission between a host computer, such as a server, and storage peripheral devices, such as HDD, SSD and optical disk drives and disk and tape-based storage systems. Some of these solutions are delivered as stand-alone semiconductors, typically as a controller. Other solutions are delivered as circuit boards, known as adapter products, which incorporate our semiconductors onto a circuit board with other features. RAID technology is a critical part of our server storage connectivity solutions as it provides protection against the loss of critical data resulting from HDD failures.

We also provide interconnect semiconductors that support the PCI and PCIe communication standards. PCIe is the primary interconnection mechanism inside computing systems today.

Fibre Channel Products: We provide Fibre Channel HBAs, which connect host computers such as servers to FC SANs.

HDD & SSD Products: We provide read channel-based SoCs and preamplifiers to HDD OEMs. These are the critical chips required to read, write and protect data. An HDD SoC is an integrated circuit, or IC, that combines the functionality of a read channel, serial interface, memory and a hard disk controller in a small, high-performance, low-power and cost-effective package. Read channels convert analog signals that are generated by reading the stored data on the physical media into digital signals. In addition, we sell preamplifiers, which are used to amplify the initial signal to and from the drive disk heads so the signal can be processed by the read channel.

We also provide custom flash controllers to SSD OEMs. An SSD stores data in flash memory instead of on a hard disk, providing high speed access to the data. Flash controllers manage the underlying flash memory in SSDs, performing critical functions such as reading and writing data to and from the flash memory and performing error correction, wear leveling and bad block management.

Industrial & Other. We provide a broad variety of products for the general industrial and automotive markets. This segment also includes IP licensing revenue.

Optocouplers: We offer optical isolators, or optocouplers, which provide electrical insulation and signal isolation for signaling systems that are susceptible to electrical noise or interference. Optocouplers are used in a diverse set of applications, including industrial motors, automotive systems including those used in hybrid engines, power generation and distribution systems, switching power supplies, motion sensors, telecommunications equipment, computers and office equipment, plasma displays, and military electronics.

Industrial Fiber Optics: For industrial networking, we provide fast optical transceivers using plastic optical fiber that enable quick and interoperable networking and factory automation.

Motion Encoders: For industrial motors and robotic motion control, we supply optical encoders, as well as ICs for the controller and decoder functions.

LEDs: For electronic signs and signals, we supply LED assemblies that offer high brightness and stable light output over thousands of hours, enabling us to support traffic signals, large commercial signs and other displays.

Research and Development

We are committed to continuous investment in product development, with a focus on rapidly introducing new, proprietary products. Many of our products have grown out of our own research and development efforts, and have given us competitive advantages in certain target markets due to performance differentiation. However, from time to time we also seek to enhance our capabilities through the acquisition of engineers with complementary research and development skills and complementary technologies and businesses. We focus our research and development efforts on the development of innovative, sustainable and higher value product platforms. We leverage our design capabilities in markets where we believe our innovation and reputation will allow us to earn attractive margins by developing high value-add products.

We plan to continue investing in product development, both organically and through acquisition, to drive growth in our business. We also invest in process development and fabrication capabilities to optimize processes for devices that are manufactured internally. Our field application engineers and design engineers are located in many places around the world, and in many cases near our top customers. This enhances our customer reach and our visibility into new product opportunities and enables us to support our customers in each stage of their product development cycle, from early stages of production design through to volume manufacturing and future growth. By collaborating with our customers, we have opportunities to develop high value-added, customized products for them that leverage our existing technologies. We anticipate that we will continue to make significant research and development expenditures in order to maintain our competitive position, and with a continuous flow of innovative and sustainable product platforms.

Customers, Sales and Distribution

We sell our products to a wide variety of OEMs or their contract manufacturers, distributors and end customers. Certain customers require us to contract with them directly and with specified intermediaries, such as contract manufacturers, and both they and their contract manufacturers often require time-critical delivery of our products to multiple locations around the world. Historically, a relatively small number of customers have accounted for a significant portion of our net revenue. Sales to distributors accounted for 34% and 28% of our net revenue for fiscal years 2018 and 2017, respectively. Direct sales to Foxconn Technology Group companies (including Hon Hai Precision Industries), together referred to as Foxconn, accounted for 9% and 14% of our net revenue for fiscal years 2018 and 2017, respectively. We believe our aggregate sales to our top five end customers, through all channels, accounted for more than 40% of our net revenue for each of fiscal years 2018 and 2017. We believe aggregate sales to Apple, Inc., through all channels, accounted for approximately 25% of our net revenue for fiscal year 2018 and more than 20% for fiscal year 2017. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

We sell our products through our direct sales force and a select network of distributors globally. Our direct sales force is focused on supporting our large OEM customers. Our sales force has specialized product and service knowledge that enables us to sell specific offerings at key levels throughout a customer's organization.

We have sales offices located in various countries, with a significant presence in Asia, which is a key center of the worldwide electronics supply chain. Many of our customers design products in North America or Europe that are then manufactured in Asia. We also maintain dedicated regional customer support call centers, where we address customer issues and handle logistics and other order fulfillment requirements.

We have strategically developed distributor relationships to serve thousands of customers around the world. A significant amount of our sales are to large global electronic components distributors, complemented by a number of regional distributors with customer relationships based on their respective product ranges.

We believe we are well-positioned to support our customers throughout the design, technology transfer and manufacturing stages across all geographies.

Operations

The majority of our front-end wafer manufacturing operations is outsourced to external foundries, including Taiwan Semiconductor Manufacturing Company Limited, or TSMC, primarily, as well as United Microelectronics Corporation, Semiconductor Manufacturing International Corporation, GlobalFoundries, TowerJazz and WIN Semiconductors Corp. We use third-party contract manufacturers for a significant majority of our assembly and test operations, including Advanced Semiconductor Engineering, Inc., Amkor Technology, Inc., Siliconware Precision Industries Co., Ltd., Inari Technology Sdn Bhd and Flextronics Telecom Systems, Ltd. We use our internal fabrication facilities for products utilizing our innovative and proprietary processes, to protect our IP and to accelerate time to market for our products. Examples of internally fabricated semiconductors include our FBAR filters for wireless communications and our vertical-cavity surface emitting laser and side emitting lasers-based on GaAs and InP lasers for fiber optic communications. The majority of our internal III-V semiconductor wafer fabrication is done in the U.S. and Singapore. Many of our products are designed to be manufactured in a specific process, typically at one particular foundry, either our own or with a particular contract manufacturer, and in some instances, we may only qualify one contract manufacturer to manufacture certain of our products.

We store the majority of our product inventory in our warehouse in Malaysia. However, for selected customers, we maintain finished goods inventory near or at customer manufacturing sites to support their just-in-time production.

Materials and Suppliers

Our manufacturing operations employ a wide variety of semiconductors, electromechanical components and assemblies and raw materials. We purchase materials from hundreds of suppliers on a global basis. These supply relationships are generally conducted on a purchase order basis. While we have not experienced any significant difficulty in obtaining the materials used in the conduct of our business and we believe that no single supplier is material, some of the parts are not readily available from alternate suppliers due to their unique design or the length of time necessary for re-design or qualification. Our long-term relationships with our suppliers allow us to proactively manage our technology development and product discontinuance plans, and to monitor our suppliers' financial health. Some suppliers may, nonetheless, extend their lead times, limit supplies, increase prices or cease to produce necessary parts for our products. If these are unique or highly specialized components, we may not be able to find a substitute quickly, or at all. To address the potential disruption in our supply chain, we may use a number of techniques, including, in some cases, qualifying more than one source of supply, redesigning products for alternative components and incremental, or in some cases "lifetime," purchases of affected parts for supply buffer.

Competition

The global semiconductor market is highly competitive. Our competitors range from large, international companies offering a wide range of products to smaller companies specializing in narrow markets. We compete with integrated device manufacturers, or IDMs, and fabless semiconductor companies, as well as the internal resources of large, integrated OEMs. The competitive landscape is changing as a result of a trend toward consolidation within the industry, as some of our competitors have merged with or been acquired by other competitors while others have begun collaborating with each other. We expect this consolidation trend to continue. We expect competition in the markets in which we participate to continue to increase as existing competitors improve or expand their product offerings and as new companies enter the market. Additionally, our ability to compete effectively depends on a number of factors, including: quality, technical performance, price, product features, product system compatibility, system-level design capability, engineering expertise, responsiveness to customers, new product innovation, product availability, delivery timing and reliability, and customer sales and technical support.

Our primary competitors in the wired infrastructure segment are Intel Corp., Finisar Corp., GlobalFoundries, HiSilicon Technologies Co. Ltd., Lumentum Operations LLC, MACOM Technology Solutions Holdings, Inc., Marvell Technology Group, Ltd., Mediatek Inc., Mellanox Technologies, Inc., Mitsubishi Electric Corporation, NXP Semiconductors N.V., Quantenna Communications, Inc., ST Microelectronics N.V., and Sumitomo Corporation. We compete based on the strength of our high speed proprietary design expertise, our customer relationships, and broad product portfolio.

Our primary competitors in the wireless communications segment are Murata Manufacturing Co., Ltd., Qorvo, Inc., Qualcomm Inc., Skyworks Solutions, Inc., and TDK-EPC Corporation. We compete based on our expertise in FBAR technology, amplifier design, module integration and proprietary material processes.

Our primary competitors in the enterprise storage segment include Cisco Systems, Inc., Marvell Technology Group, Ltd., Microsemi Corp., and Texas Instruments, Inc. We compete based on our expertise in multiple storage protocols and mixed-signal design.

Our primary competitors in the industrial & other segment are Analog Devices, Inc., Cree, Inc., Hamamatsu Photonics K.K., Heidenhain Corporation, Renesas Electronics Corporation and Toshiba Corporation. We compete based on our design expertise, broad product portfolio, reputation for quality products and large customer base.

Intellectual Property

Our success depends in part upon our ability to protect our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks, service marks, trade secrets and similar IP, as well as customary contractual protections with our customers, suppliers, employees and consultants, and through security measures to protect our trade secrets. We believe our current product expertise, key engineering talent and IP portfolio provide us with a strong platform from which to develop application specific products in key target markets.

As of November 4, 2018, we had 20,898 U.S. and other patents and 1,655 U.S. and other pending patent applications. Our research and development efforts are presently resulting in approximately 100 new patent applications per year, relating to a wide range of ASIC, isolation, encoder, LED, RF and optoelectronic components, enterprise storage products, HDD silicon, PCIe, USB and other standard I/O devices, Ethernet and Fibre-Channel connectivity and controllers, set-top box SoCs, cable modem SoCs, broadband access SoCs, wireless connectivity SoCs, switching/routing SoCs, high performance processor SoCs and associated applications. The expiration dates of our patents range from 2019 to 2037, with a small number of patents expiring in the near future, none of which are expected to be material to our IP portfolio. We are not substantially dependent on any single patent or group of related patents.

We focus our patent application program to a greater extent on those inventions and improvements that we believe are likely to be incorporated into our products, as contrasted with more basic research. However, we do not know how many of our pending patent applications will result in the issuance of patents or the extent to which the examination process could require us to narrow our claims.

We and our predecessors have also entered into a variety of IP licensing and cross-licensing arrangements that have both benefited our business and enabled some of our competitors. A portion of our revenue comes from IP licensing royalty payments and from technology claim settlements relating to such IP. We also license in third-party technologies that are incorporated into some elements of our design activities, products and manufacturing processes. Historically, licenses of the third-party technologies used by us have generally been available to us on acceptable terms.

The semiconductor industry is characterized by the existence of a large number of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including by patent holding companies that do not make or sell products. Many of our customer agreements require us to indemnify our customers for third-party IP infringement claims. Claims of this sort could harm our relationships with our customers and might deter future customers from doing business with us. With respect to any IP rights claims against us or our customers or distributors, we may be required to cease manufacture of the infringing product, pay damages, expend resources to develop non-infringing technology, seek a license which may not be available on commercially reasonable terms or at all, or relinquish patents or other IP rights.

Employees

As of November 4, 2018, we had approximately 15,000 employees worldwide. By geography, approximately 55% of our employees are located in North America, 38% in Asia, and 7% in Europe, the Middle East and Africa. In the U.S., none of our employees are represented by a labor union. A small number of our employees in other countries is represented by workers' councils or labor unions or are party to collective bargaining agreements.

Environmental and Other Regulation

Our research and development and manufacturing operations involve the use of hazardous substances and are regulated under international, federal, state and local laws governing health, safety and the environment. These regulations include limitations on discharge of pollutants to air, water, and soil; remediation requirements; product chemical content limitations; manufacturing chemical use and handling restrictions; pollution control requirements; waste minimization considerations; and treatment, transport, storage and disposal of solid and hazardous wastes. We are also subject to regulation by the United States Occupational Safety and Health Administration and similar health and safety laws in other jurisdictions.

We believe that our properties and operations at our facilities comply in all material respects with applicable environmental laws and worker health and safety laws. However, the risk of environmental liabilities cannot be completely eliminated and there can be no assurance that the application of environmental, health and safety laws to our business will not require us to incur significant expenditures.

We are also regulated under a number of international, federal, state and local laws regarding recycling, product packaging and product content requirements, including legislation enacted in the U.S., European Union and China, among a growing number of jurisdictions, which have placed greater restrictions on the use of lead, among other chemicals, in electronic products, which affects materials composition and semiconductor packaging. These laws are becoming more stringent and may in the future cause us to incur significant expenditures.

Backlog

Our sales are generally made pursuant to short-term purchase orders. These purchase orders are made without deposits and may be, and often are, rescheduled, canceled or modified on relatively short notice, without substantial penalty. Therefore, we believe that purchase orders or backlog are not necessarily a reliable indicator of future sales.

Seasonality

Historically, our net revenue has typically been higher in the second half of the fiscal year than in the first half, primarily due to seasonality in our wireless communications segment. This segment has historically experienced seasonality due to launches of new mobile handsets manufactured by our OEM customers. However, from time to time, typical seasonality and industry cyclicality are overshadowed by other factors such as wider macroeconomic effects, the timing of significant product transitions and launches by large OEMs, particularly in the wireless communications segment. We have a diversified business portfolio and we believe that our overall revenue is less susceptible to seasonal variations as a result of this diversification.

Other Information

Broadcom was incorporated in Delaware in January 2018 and is successor to Broadcom-Singapore. Our headquarters are in San Jose, California. The address of our headquarters is 1320 Ridder Park Drive, San Jose, California 95131, and our telephone number there is (408) 433-8000. Our common stock is listed on The Nasdaq Global Select Market under the trading symbol “AVGO”.

Broadcom is subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, or Exchange Act, and, in accordance therewith, files periodic reports, proxy statements and other information with the Securities and Exchange Commission, or SEC.

Such periodic reports, proxy statements and other information is available at the SEC’s website at http://www.sec.gov. We maintain a website at www.broadcom.com. You may access our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and other reports (and amendments thereto) filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC, as well as, proxy statements filed by Broadcom, free of charge at the “Investor Center — SEC Filings” section of our website at www.broadcom.com, as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC. The reference to our website address does not constitute incorporation by reference of the information contained on or accessible through our website.

ITEM 1A. RISK FACTORS

As noted above, Broadcom is the successor to Broadcom-Singapore. Following the Redomiciliation Transaction, after the close of market trading on April 4, 2018, Broadcom-Singapore became an indirect wholly-owned subsidiary of Broadcom and we subsequently deregistered the Partnership.

Our business, operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock. The following important factors, among others, could cause our actual results to differ materially from historical results and those expressed in forward-looking statements made by us or on our behalf in filings with the SEC, press releases, communications with investors and oral statements.

Risks Related to Our Business

The majority of our sales come from a small number of customers and a reduction in demand or loss of one or more of our significant customers may adversely affect our business.

We are dependent on a small number of end customers, OEMs, their respective contract manufacturers, and certain distributors for a majority of our business, revenue and results of operations. For fiscal years 2018 and 2017, sales to distributors accounted for 34% and 28% of our net revenue, respectively. Direct sales to Foxconn accounted for 9% and 14% of our net revenue for fiscal years 2018 and 2017, respectively. We believe our aggregate sales to our top five end customers, through all channels, accounted for more than 40% of our net revenue for each of fiscal years 2018 and 2017. We believe aggregate sales to Apple Inc., through all channels, accounted for approximately 25% and more than 20% of our net revenue for fiscal years 2018 and 2017, respectively. This customer concentration increases the risk of quarterly fluctuations in our operating results and our sensitivity to any material, adverse developments experienced by our significant customers.

In addition, our top customers’ purchasing power has, in some cases, given them the ability to make greater demands on us with regard to pricing and contractual terms in general. We expect this trend to continue, which may adversely affect our gross margin on certain products and, should we fail to comply with such terms, might also result in substantial liability that could harm our business, financial condition and results of operations.

Moreover, the terms and conditions under which we do business with most of our customers generally do not include commitments by those customers to purchase any specific quantities of products from us. Even in those instances where we enter into an arrangement under which a customer agrees to source an agreed portion of its product needs from us (provided that we are able to meet specified development, supply and quality commitments), the arrangement often includes pricing schedules or methodologies that apply regardless of the volume of products purchased, and those customers may not purchase the amount of product we expect. As a result, we may not generate the amount of revenue or the level of profitability we expect under such arrangements. If we do not perform under these arrangements, we could also be liable for significant monetary damages. In addition, we are selling an increasing amount of our products through a limited number of distributors, which may expose us to additional customer concentration and related credit risks.

The loss of, or any substantial reduction in sales to, any of our major customers could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Dependence on contract manufacturing and suppliers of critical components within our supply chain may adversely affect our ability to bring products to market, damage our reputation and adversely affect our results of operations.

We operate a primarily outsourced manufacturing business model that principally utilizes third-party wafer foundry and module assembly and test capabilities, referred to as contract manufacturers. Our products require semiconductor wafer manufacturers with state-of-the-art fabrication equipment and techniques, and most of our products are designed to be manufactured in a specific process, typically at one particular fab or foundry, either our own or with a particular contract manufacturer.

We depend on our contract manufacturers to allocate sufficient manufacturing capacity to meet our needs, to produce products of acceptable quality at acceptable yields, and to deliver those products to us on a timely basis. Although we often have long-term contracts with our contract manufacturers, we do not generally have long-term capacity commitments. We obtain substantially all of our manufacturing services on a purchase order basis and our contract manufacturers have no obligation to provide us with any specified minimum quantities of product. Further, from time to time, our contract manufacturers will cease to, or will become unable to, manufacture a component for us. As the lead time needed to identify, qualify and establish reliable production at acceptable yields, with a new contract manufacturer is typically lengthy, there is often no readily available alternative source for the wafers or other contract manufacturing services we require, and there may be other constraints on our ability to change contract manufacturers. In addition, qualifying such contract manufacturers is often expensive, and they may not produce products as cost-effectively as our current suppliers, which would reduce our margins. In any such circumstances, we may be unable to meet our customer demand and may fail to meet our contractual obligations. This could result in the payment of significant damages by us to our customers, and our net revenue could decline, adversely affecting our business, financial condition and results of operations.

We utilize TSMC to produce the substantial majority of our semiconductor wafers. TSMC manufactured over three-quarters of the wafers manufactured by our contract manufacturers during fiscal year 2018. Our wafer requirements represent a significant portion of the total production capacity of TSMC. However, TSMC also fabricates wafers for other companies, including certain of our competitors, and could choose to prioritize capacity for other customers or reduce or eliminate deliveries to us on short notice, or raise their prices to us, all of which could harm our business, results of operations and gross margin.

Any substantial disruption in TSMC's supply of wafers to us, or in the other contract manufacturing services that we utilize, as a result of a natural disaster, political unrest, economic instability, equipment failure or other cause, could materially harm our business, customer relationships and results of operations.

We also depend on our contract manufacturers to timely develop new, advanced manufacturing processes, including, in the case of wafer fabrication, transitions to smaller geometry process technologies. If these new processes are not timely developed or we do not have sufficient access to them, we may be unable to maintain or increase our manufacturing efficiency to the same extent as our competitors or to deliver products to our customers, which could result in loss of revenue opportunities and damage our relationships with our customers.

We purchase a significant amount of the materials used in our products from a limited number of suppliers.

Our manufacturing processes rely on many materials, including silicon, gallium arsenide and indium phosphide wafers, copper lead frames, precious and rare earth metals, mold compound, ceramic packages and various chemicals and gases. We purchase a significant portion of our semiconductor materials, components and finished goods used in our products from a few materials providers, some of which are single source suppliers. During the fiscal year ended November 4, 2018, we purchased approximately two-thirds of the materials for our manufacturing processes from five materials providers. Substantially all of our purchases are on a purchase order basis, and we do not generally have long-term contracts with our materials providers. Suppliers may extend lead times, limit supplies or increase prices due to commodity price increases, capacity constraints or other factors, which may lead to interruption of supply or increased demand in the industry. In the event that we cannot timely obtain sufficient quantities of materials or at reasonable prices, the quality of the material deteriorates or we are not able to pass on higher materials or energy costs to our customers, our business, financial condition and results of operations could be adversely impacted.

Failure to realize the benefits expected from the CA Merger could adversely affect the value of our common stock.

The completion of the CA Merger is a key step in strategically developing our business from being predominately a semiconductor solutions provider to being a broad-based infrastructure technology provider focused on mission critical technology. As part of this development, we plan to change the CA business strategy to focus on renewing contracts for mission critical software with existing core clients, and expanding the adoption of other existing CA offerings with these clients. We believe our success with the CA business is dependent on this strategy. If CA products are not as critical to customers as we believe, or if CA customers do not accept this change in strategy, such customers may elect not to renew their subscriptions for CA products and the investments we have made or may make to implement this strategy may be of no or limited value, we may lose customers, our financial results may be adversely affected and our stock price may suffer.

Although we expect significant benefits to result from the CA Merger, there can be no assurance that we will be able to successfully realize these benefits. Achieving these benefits will depend, in part, on our ability to integrate CA's business successfully and efficiently. The challenges involved in this integration, which will be complex and time consuming, include the following:

- preserving CA’s customer and other important relationships, including managing a customer base with a wider global footprint, particularly in Europe;

- managing effectively a new business that license products under contracts that need to be regularly renewed, instead of selling products, and competing in a new industry;

- our ability to enter into new, or renewing, contracts that provide for termination thereof by our customers at any time for any reason, in order to enable us to effectively recognize revenue from these contracts ratably over time;

- recognizing revenue for software and subscription offerings, the timing and standards for which differ from those of product sales;

- integrating financial forecasting and controls, procedures and reporting cycles;

- consolidating and integrating corporate, information technology, finance, HR systems and benefits, and administrative infrastructures;

- reorienting the CA sales and marketing force to align with the change in strategy and effectively position the business;

- consolidating the number of CA channel partners, including resellers and global system integrators;

- coordinating and integrating operations and managing employees in countries in which we have not previously operated extensively or at all, including a number of European and South American countries; and

- integrating employees and maintaining employee morale and retaining key employees, particularly for those employees whose compensation structure will be materially different following the acquisition.

If we do not successfully manage these and related issues and challenges, we may not achieve the anticipated benefits of the CA Merger and our revenue, expenses, operating results, financial condition and stock price could be materially adversely affected. For example, goodwill and other intangible assets could be determined to be impaired, which could adversely impact our financial results. The successful integration of the CA business and the implementation of changes in CA's business strategy described above will require significant management attention and may divert management's attention from our business and operational issues and opportunities.

We may pursue acquisitions, investments, joint ventures and dispositions, which could adversely affect our results of operations.

Our growth strategy includes the acquisition of, and investment in, businesses that offer complementary products, services and technologies, augment our market coverage, or enhance our technological capabilities. We may also enter into strategic alliances or joint ventures to achieve these goals. We may not be able to identify suitable acquisition, investment, alliance, or joint venture opportunities, or to consummate any such transactions. In addition, our original estimates and assumptions used in assessing any transaction may be inaccurate and we may not realize the expected financial or strategic benefits of any such transaction.

Any acquisitions we may undertake involve risks and uncertainties, such as unexpected delays, challenges and related expenses, and diversion of management's attention. If we fail to complete an acquisition, our stock price could fall to the extent the price reflects an assumption that such acquisition will be completed, and we may incur significant unrecoverable costs. Further, the failure to consummate an acquisition may result in negative publicity and adversely impact our relationships with our customers, vendors and employees. We may become subject to legal proceedings relating to the acquisition and the integration of acquired businesses may not be successful. The integration of an acquired business involves significant challenges, including, among others: potential disruption of our business, diversion of management's attention from daily operations and the pursuit of other opportunities; incurring significant restructuring charges and amortization expense, assuming liabilities and ongoing lawsuits, potential impairment of acquired goodwill and other intangible assets, and increasing our expenses and working capital requirements; and implementing our management information systems, operating systems and internal controls for the acquired operations. In addition, our due diligence process may fail to identify significant issues with the acquired company's products, financial disclosures, accounting practices, legal, tax and other contingencies, compliance with local laws and regulations (and interpretations thereof) in multiple international jurisdictions, as well as compliance with U.S. laws and regulations. These difficulties may be complicated by factors such as the size of the business or entity acquired, geographic and cultural differences, lack of experience operating in the industry or geographic markets of the acquired business, potential loss of key employees and customers, the potential for deficiencies in internal controls at the acquired or combined business, performance problems with the acquired business' technology, exposure to unanticipated liabilities of the acquired business, insufficient revenue to offset increased expenses associated with the acquisition, adverse tax consequences and our potential inability to achieve the growth prospects or synergies expected from any such acquisition.

Failure to manage and successfully integrate the acquisitions we make, or to improve margins of the acquired businesses and products, could materially harm our business, operating results and margins.

Any future acquisitions we make may require significant additional debt or equity financing, which, in the case of debt financing, would increase our leverage and potentially negatively affect our credit ratings, and in the case of equity or equity-linked financing, would be dilutive to our existing stockholders. Any downgrades in our credit ratings could adversely affect our ability to borrow by resulting in more restrictive borrowing terms or increased borrowing costs. As a result, we may be unable to complete acquisitions or other strategic transactions in the future to the same extent as in the past, or at all. These and other factors could harm our ability to achieve anticipated levels of profitability of acquired businesses or realize other anticipated benefits of an acquisition, and could adversely affect our business, financial condition and results of operations.

From time to time, we may also seek to divest or wind down portions of our business, either acquired or otherwise, or we may exit minority investments, each of which could materially affect our cash flows and results of operations. Any future dispositions we may make could involve risks and uncertainties, including our ability to sell such businesses on terms acceptable to us, or at all. In addition, any such dispositions could result in disruption to other parts of our business, potential loss of employees or customers, or exposure to unanticipated liabilities or ongoing obligations to us following any such dispositions. For example, in connection with such dispositions, we often enter into transition services agreements or other strategic relationships, including long-term research and development arrangements and sales arrangements, or agree to provide certain indemnities to the purchaser, which may result in additional expenses and may adversely affect our financial condition and results of operations. In addition, dispositions may include the transfer of technology and/or the licensing of certain IP rights to third-party purchasers, which could limit our ability to utilize such IP rights or assert these rights against such third-party purchasers or other third parties.

Failure to adjust our manufacturing and supply chain to accurately meet customers demand could adversely affect our results of operations.

We make significant decisions, including determining the levels of business that we will seek and accept, production schedules, levels of reliance on contract manufacturing and outsourcing, internal fabrication utilization and other resource requirements, based on our estimates of customer requirements. Factors that can impact our ability to accurately estimate future customer requirements include the short-term nature of many customers' commitments, our customers' ability to reschedule, cancel and modify orders with little or no notice and without significant penalty, the accuracy of our customers' forecasts and the possibility of rapid changes in demand for our customers' products, as well as seasonal or cyclical trends in their industries or the semiconductor industry.

To ensure the availability of our products, particularly for our largest customers, we typically start manufacturing our relevant products based on our customers' forecasts, which are not binding. As a result, we incur inventory and manufacturing costs in advance of anticipated sales that may never materialize or that may be substantially lower than expected. If actual demand for our products is lower than forecast, we may also experience higher inventory carrying and operating costs and product obsolescence. Because certain of our sales, research and development, and internal manufacturing overhead expenses are relatively fixed, a reduction in customer demand may also decrease our gross margin and operating income.

Conversely, customers often require rapid increases in production on short notice. We may be unable to secure sufficient materials or contract manufacturing capacity to meet such increases in demand. This could damage our customer relationships, reduce revenue growth and margins, subject us to additional liabilities, harm our reputation, and prevent us from taking advantage of opportunities.

We are subject to risks associated with our distributors, including product inventory levels and product sell-through.

We sell many of our semiconductor products through distributors who maintain their own inventory of our products for sale to dealers and end customers. Sales to distributors accounted for 34% of our net revenue in fiscal year 2018. If our distributors are unable to sell an adequate amount of their inventory of our products in a given quarter or if they decide to decrease their inventories for any reason, our sales to these distributors and our revenue may decline. We also face the risk that our distributors may increase inventory levels of our products in any particular quarter in excess of future anticipated sales. If such sales do not occur in the time frame anticipated by these distributors for any reason, these distributors may substantially decrease the amount of product they order from us in subsequent periods until their inventory levels realign with end customer demand, which would harm our business and could adversely affect our revenue in such subsequent periods. We have streamlined the number of distributors we use, making us increasingly dependent on our remaining distributors, which may exacerbate the foregoing risks and increase our related credit risk.

We do not always have a direct relationship with the end customers of our products. As a result, our products may be used in applications for which they were not necessarily designed or tested, including, for example, medical devices, and they may not perform as anticipated in such applications. In such event, failure of even a small number of parts could result in significant liabilities to us, damage our reputation and harm our business and results of operations.

Our business would be adversely affected by the departure of existing members of our senior management team.

Our success depends, in large part, on the continued contributions of our senior management team, and in particular, the services of Mr. Hock E. Tan, our President and Chief Executive Officer. Effective succession planning is also important for our long-term success. Failure to ensure effective transfers of knowledge and smooth transitions involving senior management could hinder our strategic planning and execution. None of our senior management is bound by written employment contracts. In addition, we do not currently maintain key person life insurance covering our senior management. The loss of any of our senior management could harm our ability to implement our business strategy and respond to the rapidly changing market conditions in which we operate.

Our operating results are subject to substantial quarterly and annual fluctuations.

Our revenue and operating results have fluctuated in the past and are likely to fluctuate in the future. These fluctuations may occur on a quarterly and annual basis and are due to a number of factors, many of which are beyond our control. These factors include, among others:

- customer concentration and the gain or loss of significant customers;
- the timing of launches by our customers of new products, such as mobile handsets, in which our products are included and changes in end-user demand for the products manufactured and sold by our customers;
- changes in our product mix or customer mix and their effect on our gross margin;
- the shift to cloud-based IT solutions and services, such as hyperscale computing, which may adversely affect the timing and volume of sales of our products for use in traditional enterprise data centers;
- the timing of receipt, reduction or cancellation of significant product orders by customers;
- the timing of new software contracts and renewals, as well as the timing of any terminations of software contracts that require us to refund to customers any pre-paid amounts under the contract, which may adversely affect our cash flows;
- fluctuations in the levels of component inventories held by our customers;
- utilization of our internal manufacturing facilities and fluctuations in manufacturing yields;
- our ability to successfully and timely integrate, and realize the benefits of acquisitions we may make and the timing of acquisitions or dispositions of, or making and exiting investments in, other entities, businesses or technologies;
- our ability to develop, introduce and market new products and technologies on a timely basis;
- the timing and extent of our software license and subscription revenue, and other non-product revenue, such as product development revenue and royalty and other payments from IP sales and licensing arrangements;
- new product announcements and introductions by us or our competitors;
- seasonality or other fluctuations in our markets;
- IP disputes and associated litigation expense;
- timing and amount of research and development and related new product expenditures, and the timing of receipt of any research and development grant monies;
- significant warranty claims, including those not covered by our suppliers or our insurers;

- availability and cost of raw materials and components from our suppliers;
- timing of any regulatory updates, particularly with respect to trade sanctions and customs duties and tariffs, and tax reform;
- fluctuations in currency exchange and interest rates;
- changes in taxation of international businesses, which could increase our overall cash tax costs;
- changes in our tax structure or incentive arrangements, which may adversely affect our net tax expense and our cash flow in any quarter in which such an event occurs;
- loss of key personnel or the shortage of available skilled workers; and
- the effects of competitive pricing pressures, including decreases in average selling prices of our products.

The foregoing factors are often difficult to predict, and these, as well as other factors, could materially adversely affect our quarterly or annual operating results. In addition, a significant amount of our operating expenses are relatively fixed in nature due to our significant sales, research and development, and internal manufacturing overhead costs. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. As a result, we believe that quarter-to-quarter comparisons of our revenue and operating results may not be meaningful or a reliable indicator of our future performance. If our operating results in one or more future quarters fail to meet the expectations of securities analysts or investors, a significant decline in the trading price of our common stock may occur, which may happen immediately or over time.

If we are unable to attract and retain qualified personnel, especially our engineering and technical personnel, we may not be able to execute our business strategy effectively.

Our future success depends on our ability to retain, attract and motivate qualified personnel. We also seek to acquire talented engineering and technical personnel, as well as effective sales professionals, through acquisitions we may make from time to time or otherwise. We have historically encountered some difficulties in hiring and retaining qualified engineers, particularly in Silicon Valley and Southeast Asia where qualified engineers are in high demand. In addition, our employees, including employees whom we have retained as a result of an acquisition, may decide not to continue working for us and may leave with little or no notice. As the source of our technological and product innovations, our engineering and technical personnel are a significant asset. We are making a multi-year equity award to most of our employees, including CA employees, many of whom were not eligible to receive equity awards prior to the CA Merger. This award is intended to approximate four consecutive annual grants that will vest in four tranches with successive four-year vesting periods. While we believe these awards provide a powerful long-term retention incentive to employees, we may be incorrect in this assumption, particularly if there is a material and persistent decline in the price of our stock. Any inability to retain, attract or motivate such personnel could have a material adverse effect on our business, financial condition and results of operations.

Adverse global economic conditions could have a negative effect on our business, results of operations and financial condition and liquidity.

A general slowdown in the global economy or in a particular region or industry or a tightening of the credit markets could negatively impact our business, financial condition and liquidity. Adverse global economic conditions have from time to time caused or exacerbated significant slowdowns in the industries and markets in which we operate, which have adversely affected our business and results of operations. In recent periods, investor and customer concerns about the global economic outlook have adversely affected market and business conditions in general. Macroeconomic weakness and uncertainty also make it more difficult for us to accurately forecast revenue, gross margin and expenses, and may make it more difficult to raise or refinance debt. Sustained uncertainty about, or worsening of, current global economic conditions could cause our customers and consumers to reduce, delay or forgo technology spending, could lead to the insolvency or consolidation of key suppliers and customers, and could intensify pricing pressures. Any or all of these factors could negatively affect demand for our products and our business, financial condition and results of operations.

We operate in the highly cyclical semiconductor industry, which is subject to significant downturns.

The semiconductor industry is highly cyclical and is characterized by constant and rapid technological change and price erosion, evolving technical standards, frequent new product introductions, short product life cycles (for semiconductors and for many of the end products in which they are used) and wide 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 industry in general, and in our business in particular. Periods of industry downturns have been characterized by diminished demand for end-user products, high inventory levels and periods of inventory adjustment, under-utilization of manufacturing capacity, changes in revenue mix and accelerated 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 industry or market downturns, our net revenue may decline and our financial condition and results of operations may suffer.

Winning business in the semiconductor solutions industry is subject to a lengthy process that often requires us to incur significant expense, from which we may ultimately generate no revenue.

Our semiconductor business is dependent on us winning competitive bid selection processes, known as "design wins". These selection processes are typically lengthy and can require us to dedicate significant development expenditures and scarce engineering resources in pursuit of a single customer opportunity. Failure to obtain a particular design win may prevent us from obtaining design wins in subsequent generations of a particular product. This can result in lost revenue and can weaken our position in future competitive bid selection processes.

Winning a product design does not guarantee sales to a customer or that we will realize as much revenue as anticipated, if any. A delay or cancellation of a customer's plans could materially and adversely affect our financial results, as we incur significant expense in the design process and may generate little or no revenue from it. In addition, the timing of design wins is unpredictable and implementing production for a major design win, or multiple design wins occurring at the same time, may strain our resources and those of our contract manufacturers. In such event, we may be forced to dedicate significant additional resources and incur additional, unanticipated costs and expenses. Often customers will only purchase limited numbers of evaluation units from us until they qualify the products and/or the manufacturing line for those products. The qualification process can take significant time and resources and we may not always be able to satisfy customers' qualification requirements. Delays in qualification or failure to qualify our products may cause a customer to discontinue use of our products and result in a significant loss of revenue. Finally, customers could choose at any time to stop using our products or could fail to successfully market and sell their products, which could reduce demand for our products, and cause us to hold excess inventory, materially adversely affecting our business, financial condition and results of operations. These risks are exacerbated by the fact that many of our products, and the end products into which our products are incorporated, often have very short life cycles.

Competition in our industries could prevent us from growing our revenue.

The industries in which we operate are highly competitive and characterized by rapid technological changes, evolving industry standards, changes in customer requirements, often aggressive pricing practices and, in some cases, new delivery methods. We expect competition in these industries to continue to increase as existing competitors improve or expand their product offerings or as new competitors enter our markets.

In addition, the competitive landscape is changing in these industries as a result of a trend toward consolidation. Some of our direct competitors have merged with or been acquired by other competitors. We expect this consolidation trend to continue, which may result in the combined competitors having greater manufacturing, distribution, financial, research and development or marketing resources than us. In addition, some of our competitors may also have a greater presence in key markets, a larger customer base or more comprehensive IP portfolio and patent protection than us.

We compete with integrated device manufacturers and fabless semiconductor companies, as well as the internal resources of large, integrated OEMs. Because our products are often building block semiconductors, providing functions that in some cases can be integrated into more complex integrated circuits, or ICs, we also face competition from manufacturers of ICs, as well as customers that may develop their own IC products. Our competitors in these markets range from large, international companies offering a wide range of semiconductor products and devices to smaller companies specializing in niche markets and new technologies.

Our competitors also include large vendors of hardware and operating system software and cloud service providers. Some of our competitors have longer operating histories, greater name recognition, a larger installed base of customers in any particular market, larger technical staffs, more established relationships with hardware vendors, or greater financial, technical and marketing resources than us. We also face competition from numerous start-ups and smaller companies that specialize in specific aspects of the highly fragmented software industry, open source authors who may provide software and intellectual property for free, competitors who may offer their products through try-and-buy or freemium models, and customers who may develop competing products.

The actions of our competitors, in the areas of pricing and product bundling in particular, could have a substantial adverse impact on us. If we are unable to compete successfully, we may lose market share for our products or incur significant reduction in our gross margins, either of which could have a material adverse effect on our business and results of operations.

A prolonged disruption of our manufacturing facilities, research and development facilities or other significant operations, or those of our suppliers, could have a material adverse effect on our business, financial condition and results of operations.

Although we operate a primarily outsourced manufacturing business model, we also rely on our own manufacturing facilities, in particular in Fort Collins, Colorado, Singapore, and Breinigsville, Pennsylvania. We use these internal fabrication facilities for products utilizing our innovative and proprietary processes, in order to protect our IP, to accelerate time to market of our products and to ensure supply of certain components. Our Fort Collins and Breinigsville facilities are the sole sources for the film bulk acoustic resonator components used in many of our wireless devices and for the indium phosphide-based wafers used in our fibre optics products, respectively. Many of our facilities, and those of our contract manufacturers and suppliers, are located in California and the Pacific Rim region, which has above average seismic activity and severe weather activity. In addition, our research and development personnel are primarily concentrated in China, Czech Republic, India, Israel, Malaysia, Singapore, South Korea, Taiwan, Colorado, California and Pennsylvania, with the expertise of the personnel at each such location tending to be focused on one or two specific areas.

A prolonged disruption at one or more of our manufacturing facilities for any reason, especially our Colorado, Singapore and Pennsylvania facilities, or those of our contract manufacturers or suppliers, due to natural- or man-made disasters or other events outside of our control, such as equipment malfunction or widespread outbreaks of acute illness at one or more of these facilities, would limit our capacity to meet customer demands and delay new product development until a replacement facility and equipment, if necessary, were found. Any such event would likely disrupt our operations, delay production, shipments and revenue, result in us being unable to timely satisfy customer demand, expose us to claims by our customers resulting in significant expense to repair or replace our affected facilities, and, in some instances, could significantly curtail our research and development efforts in a particular product area or target market. As a result, we could forgo revenue opportunities, potentially lose market share, damage our customer relationships and be subject to litigation and additional liabilities, all of which could materially and adversely affect our business. Although we purchase insurance to mitigate certain losses, such insurance often carries a high deductible amount and any uninsured losses could negatively affect our operating results. In addition, even if we were able to promptly resume production of our affected products, if our customers cannot timely resume their own manufacturing following such an event, they may cancel or scale back their orders from us and this may in turn adversely affect our results of operations. Such events could also result in increased fixed costs relative to the revenue we generate and adversely affect our results of operations.

We may be unable to maintain appropriate manufacturing capacity at our own manufacturing facilities, which could adversely affect our relationships with our customers, and our business, financial condition and results of operations.

We must maintain appropriate capacity at our own manufacturing facilities to meet anticipated customer demand for our proprietary products. From time to time, this requires us to invest in expansion or improvements of those facilities, which often involves substantial cost and other risks, such as delays in completion. Such expanded manufacturing capacity may still be insufficient, or may not come online soon enough, to meet customer demand and we may have to put customers on product allocation, forgo sales or lose customers as a result. Conversely, if we overestimate customer demand, we would experience excess capacity and fixed costs at these facilities, all of which could adversely affect our results of operations.

Any failure of our IT systems or one or more of our corporate infrastructure vendors to provide necessary services could have a material adverse effect on our business.

We depend on various IT systems, including networks, applications, internal IT systems and personnel, and outsourced services for, among other things, financial reporting and product orders and shipments. We rely on third-party vendors to provide critical corporate infrastructure services on a timely and effective basis and to adequately address cybersecurity threats to their own systems. Services provided by these third parties include certain services related to shipping, human resources, benefit plan administration, IT network development and network monitoring. While we may be entitled to damages if our vendors fail to perform under their agreements with us, we may be unable to collect on any award of damages and any award may be insufficient to cover the actual costs we may incur as a result of a vendor's failure to perform under its agreement with us. Upon expiration or termination of any of our third-party vendor agreements we may not be able to timely replace the vendor on terms and conditions, including service levels and costs, which are favorable to us. In addition, a transition from one vendor to another vendor could subject us to operational delays and inefficiencies until the transition is complete.

Any failure of these internal or third-party systems and services to operate effectively could disrupt our operations and could have a material adverse effect on our business, financial condition and results of operations by harming our ability to accurately forecast sales demand, manage our supply chain and production facilities, fulfill customer orders, and report financial and other information on a timely and accurate basis.

Our gross margin is dependent on a number of factors, including our product mix, price erosion, acquisitions we may make, level of capacity utilization and commodity prices.

Our gross margin is highly dependent on product mix, which is susceptible to seasonal and other fluctuations in our markets. A shift in sales mix away from our higher margin products, as well as the timing and amount of our software licensing, non-product and IP-related revenue, could adversely affect our future gross margin percentages. Although our non-product revenue is generally high margin, it fluctuates significantly from quarter to quarter. In addition, increased competition and the existence of product alternatives, more complex engineering requirements, lower demand or reductions in our technological lead, compared to our competitors, and other factors may lead to further price erosion, lower revenue and lower margin for us in the future.

Our gross margin may also be adversely affected by expenses related to the acquisitions of businesses, such as amortization of intangible assets and restructuring and impairment charges. Furthermore, businesses or companies that we acquire may have different gross margin profiles than us and could, therefore, also affect our overall gross margin.

In addition, semiconductor manufacturing requires significant capital investment, leading to high fixed costs, including depreciation expense. If we are unable to utilize our owned manufacturing facilities at a high level, the fixed costs associated with these facilities, such as depreciation expense, will not be fully absorbed, resulting in higher average unit costs and a lower gross margin. Furthermore, fluctuations in commodity prices, either directly in the price of the raw materials we buy, or as a result of price increases passed on to us by our suppliers, could negatively impact our margins. We do not hedge our exposure to commodity prices, some of which (including gold and fuel prices) are very volatile, and sudden or prolonged increases in commodities prices may adversely affect our gross margin.

We may be involved in legal proceedings, including IP, anti-competition and securities litigation, employee-related claims and governmental investigations, which could, among other things, divert efforts of management and result in significant expense and loss of our IP rights.

We are often involved in legal proceedings, including cases involving our IP rights and those of others, anti-competition and commercial matters, acquisition-related suits, securities class action suits, employee-related claims and other actions. Some of these actions may seek injunctive relief, including injunctions or exclusion orders against the sale of our products and substantial monetary damages, which if granted or awarded could materially harm our business, financial condition and results of operations. From time to time, we may also be involved or required to participate in governmental investigations or inquiries, such as the recent inquiries by the U.S. Federal Trade Commission and the European Commission into certain of our business practices. Litigation or settlement of such actions, regardless of their merit, or involvement in governmental investigations, can be complex, can extend for a protracted period of time, can divert the efforts and attention of our management and technical personnel, and is frequently costly, with the related expenditures unpredictable. An unfavorable resolution of a governmental investigation may include, among others, fines or other orders to disgorge profits or make other payments, and/or the issuance of orders to cease certain conduct and/or modify our business practices, any or all of which could materially adversely affect our reputation and our business, financial condition and results of operations.

The semiconductor and software industries are characterized by companies holding large numbers of patents, copyrights, trademarks and trade secrets and by the vigorous pursuit, protection and enforcement of IP rights, including actions by patent-holding companies that do not make or sell products. From time to time, third parties assert against us and our customers and distributors their patent, copyright, trademark, trade secret and other IP rights to technologies that are important to our business.

Many of our customer agreements, and in some cases our asset sale agreements, require us to indemnify our customers or purchasers for third-party IP infringement claims, including costs to defend those claims, and payment of damages in the case of adverse rulings. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. We do not know whether we will prevail in such proceedings, given the complex technical issues and inherent uncertainties in IP litigation. If any pending or future proceedings result in an adverse outcome, we could be required to:

- cease the manufacture, use or sale of the infringing products, processes or technology and/or make changes to our processes or products;
- pay substantial damages for past, present and future use of the infringing technology;
- expend significant resources to develop non-infringing technology;
- license technology from the third-party claiming infringement, which license may not be available on commercially reasonable terms, or at all;
- enter into cross-licenses with our competitors, which could weaken our overall IP portfolio and our ability to compete in particular product categories;
- indemnify our customers or distributors and/or recall, or accept the return of, infringing products;
- pay substantial damages to our direct or end customers to discontinue use or replace infringing technology with non-infringing technology; or
- relinquish IP rights associated with one or more of our patent claims, if such claims are held invalid or otherwise unenforceable.

Any of the foregoing results could have a material adverse effect on our business, financial condition and results of operations.

In addition, we may be obligated to indemnify our current or former directors or employees, or former directors or employees of companies that we have acquired, in connection with litigation or regulatory investigations. These liabilities could be substantial and may include, among other things, the cost of defending lawsuits against these individuals, as well as stockholder derivative suits; the cost of government, law enforcement or regulatory investigations; civil or criminal fines and penalties; legal and other expenses; and expenses associated with the remedial measure, if any, which may be imposed.

We utilize a significant amount of IP in our business. If we are unable or fail to protect our IP, our business could be adversely affected.

Our success depends in part upon protecting our IP. To accomplish this, we rely on a combination of IP rights, including patents, copyrights, trademarks and trade secrets, as well as customary contractual protections with our customers, suppliers, employees and consultants. We may be required to spend significant resources to monitor and protect our IP rights, including the usage rates of the software seat licenses and subscriptions that we sell, and even with significant expenditures we may not be able to protect the IP rights that are valuable to our business. We are unable to predict or assure that:

- the IP rights that we presently employ in our business will not lapse or be invalidated, circumvented, challenged, or, in the case of third-party IP rights licensed to us, be licensed to others;

- our IP rights will provide competitive advantages to us;

- rights previously granted by third parties to IP licensed or assigned to us, including portfolio cross-licenses, will not hamper our ability to assert our IP rights against potential competitors or hinder the settlement of currently pending or future disputes;

- any of our pending or future patent, trademark or copyright applications will be issued or have the coverage originally sought;

- our IP rights will be enforced in certain jurisdictions where competition may be intense or where legal protection may be weak; or

- we have sufficient IP rights to protect our products or our business.

In addition, our competitors or others may develop products or technologies that are similar or superior to our products or technologies, duplicate our products or technologies or design around our protected technologies. Effective patent, trademark, copyright and trade secret protection may be unavailable or more limited in other jurisdictions, relative to those protections available in the U.S., and may not be applied for or may be abandoned in one or more relevant jurisdictions. We may elect to abandon or divest patents or otherwise not pursue prosecution of certain pending patent applications, due to strategic concerns or other factors. In addition, when patents expire, we lose the protection and competitive advantages they provided to us.

We also generate some of our revenue from licensing royalty payments and from technology claim settlements relating to certain of our IP. Licensing of our IP rights, particularly exclusive licenses, may limit our ability to assert those IP rights against third parties, including the licensee of those rights. In addition, we may acquire companies with IP that is subject to licensing obligations to other third parties. These licensing obligations may extend to our own IP following any such acquisition and may limit our ability to assert our IP rights. From time to time, we pursue litigation to assert our IP rights, including, in some cases, against third parties with whom we have ongoing relationships, such as customers and suppliers. Claims of this sort could also harm our relationships with our customers and might deter future customers from doing business with us. Conversely, third parties may pursue IP litigation against us, including as a result of our IP licensing business. An adverse decision in such types of legal action could limit our ability to assert our IP rights and limit the value of our technology, including the loss of opportunities to sell or license our technology to others or to collect royalty payments based upon successful protection and assertion of our IP against others. In addition, such legal actions or adverse decisions could otherwise negatively impact our business, financial condition and results of operations.

From time to time, we may need to obtain additional IP licenses or renew existing license agreements. We are unable to predict whether these license agreements can be obtained or renewed on acceptable terms or at all.

If our software products do not remain compatible with ever-changing operating environments, platforms, or third-party products, demand for our products and services could decrease, which could materially adversely affect our business.

The largest suppliers of systems and computing software are, in most cases, the manufacturers of the computer hardware systems used by most of our customers, particularly in the mainframe space. These companies periodically modify or introduce new operating systems, systems software and computer hardware, which could require substantial modification of our products to maintain compatibility with these companies' hardware or software. There can be no assurance that we will be able to adapt our products in response to these developments.

Further, our software solutions interact with a variety of software and hardware developed by third parties. If we lose access to third-party code and specifications for the development of code, this could negatively impact our ability to develop compatible software. In addition, if software providers and hardware manufacturers, including some of our largest vendors, adopt new policies restricting the use or availability of their code or technical documentation for their operating systems, applications, or hardware, or otherwise impose unfavorable terms and conditions for such access, this could result in higher research and development costs for the enhancement and modification of our existing products or development of new products. Any additional restrictions could materially adversely affect our business, financial condition and operating results and cash flow.

Failure to enter into software license agreements on a satisfactory basis could materially adversely affect our business.

Many of our existing customers have multi-year enterprise license agreements, some of which involve substantial aggregate fee amounts. These customers have no contractual obligation to purchase additional solutions. Customer renewal rates may decline or fluctuate as a result of a number of factors, including the level of customer satisfaction with our solutions or customer support, customer budgets and the pricing of our solutions as compared with the solutions offered by our competitors, any of which may cause our revenue to grow more slowly than expected, if at all. The failure to renew customer agreements of similar scope, on terms that are commercially attractive to us, could materially adversely affect our business, financial condition and operating results and cash flow.

Our sales to government clients subject us to uncertainties regarding fiscal funding approvals, renegotiations or terminations at the discretion of the government, as well as audits and investigations, which could result in litigation, penalties and sanctions including early termination, suspension and debarment.

Our multi-year contracts signed with the U.S. federal government and other U.S. state and local government agencies are generally subject to annual fiscal funding approval and may be renegotiated or terminated at the discretion of the government. Termination, renegotiation or the lack of funding approval for a contract could adversely affect our sales, revenue and reputation. Additionally, our government contracts are generally subject to certain requirements, some of which are generally not present in commercial contracts and/or may be complex, as well as to audits and investigations. Failure to meet contractual requirements could result in various civil and criminal actions and penalties, and administrative sanctions, including termination of contracts, refund of a portion of fees received, forfeiture of profits, suspension of payments, fines and suspensions or debarment from doing business with the government and could materially adversely affect our business, financial condition, operating results and cash flow.

Certain software that we use in our products is licensed from third parties and may not be available to us in the future, which may delay product development and production or cause us to incur additional expense.

Some of our solutions contain software licensed from third parties, some of which may not be available to us in the future on terms that are acceptable to us or allow our products to remain competitive. The loss of these licenses or the inability to maintain any of them on commercially acceptable terms could delay development of future products or the enhancement of existing products.

Certain software we use is from open source code sources, which, under certain circumstances could materially adversely affect our business, financial condition, operating results and cash flow.

Some of our products contain software from open source code sources, the use of which may subject us to certain conditions, including the obligation to offer such products for no cost or to make the proprietary source code of those products publicly available. Further, although some open source vendors provide warranty and support agreements, it is common for such software to be available “as-is” with no warranty, indemnity or support. Although we monitor our use of such open source code to avoid subjecting our products to unintended conditions, such use, under certain circumstances, could materially adversely affect our business, financial condition and operating results and cash flow, including if we are required to take remedial action that may divert resources away from our development efforts.

We are subject to warranty claims, product recalls and product liability.

From time to time, we may be subject to warranty or product liability claims that may in the future lead to significant expense. Our customer contracts typically contain warranty and indemnification provisions, and in certain cases may also contain liquidated damages provisions, relating to product quality issues. The potential liabilities associated with such provisions are significant, and in some cases, including in agreements with some of our largest customers, are potentially unlimited. Any such liabilities may greatly exceed any revenue we receive from the relevant products. Costs, payments or damages incurred or paid by us in connection with warranty and product liability claims and product recalls could materially adversely affect our financial condition and results of operations. We may also be exposed to such claims as a result of any acquisition we may undertake in the future.

Product liability insurance is subject to significant deductibles and there is no guarantee that such insurance will be available or adequate to protect against all such claims, or we may elect to self-insure with respect to certain matters. For example, it is possible for one of our customers to recall a product containing one of our semiconductor devices. In such an event, we may incur significant costs and expenses, including among others, replacement costs, contract damage claims from our customers and reputational harm. Although we maintain reserves for reasonably estimable liabilities and purchase product liability insurance, our reserves may be inadequate to cover the uninsured portion of such claims. Conversely, in some cases, amounts we reserve may ultimately exceed our actual liability for particular claims and may need to be reversed.

The complexity of our products could result in unforeseen delays or expense or undetected defects or bugs, which could adversely affect the market acceptance of new products, damage our reputation with current or prospective customers, and materially and adversely affect our operating costs.

Highly complex products, such as those we offer, may contain defects and bugs when they are first introduced or as new versions, software documentation or enhancements are released, or their release may be delayed due to unforeseen difficulties during product development. If any of our products, including the products of companies we have acquired, or third-party components used in our products, contain defects or bugs, or have reliability, quality or compatibility problems, we may not be able to successfully design workarounds. Furthermore, if any of these problems are not discovered until after we have commenced commercial production of or deployed a new product, we may be required to incur additional development costs and product recall, repair or replacement costs. Significant technical challenges also arise with our software products because our customers license and deploy our products across a variety of computer platforms and integrate them with a number of third party software applications and databases. As a result, if there is system-wide failure, it may be difficult to determine which product is at fault and we could ultimately be harmed by the failure of another supplier's product. Consequently, our reputation may be damaged and customers may be reluctant to buy our products, which could materially and adversely affect our ability to retain existing customers and attract new customers. To resolve these problems, we may have to invest significant capital and other resources. These problems may also result in claims against us by our customers or others. For example, if a delay in the manufacture and delivery of our products causes the delay of a customer's end-product delivery, we may be required, under the terms of our agreement with that customer, to compensate the customer for the adverse effects of such delays. In addition, these problems may divert our technical and other resources from other development efforts, and we would likely lose, or experience a delay in, market acceptance of the affected product or products. As a result, our financial results could be materially adversely affected.

We make substantial investments in research and development to enhance existing and develop new technologies to keep pace with technological advances and to remain competitive in our business, and unsuccessful investments could materially adversely affect our business, financial condition and results of operations.

The industries in which we compete are characterized by rapid technological change, changes in customer requirements, frequent new product introductions and enhancements, short product cycles and evolving industry standards, new delivery methods and require substantial investment in our research and development in order to develop and bring to market new and enhanced technologies and products. In addition, semiconductor products transition over time to increasingly smaller line width geometries. This requires us to adapt our products and manufacturing processes to these new technologies, which requires expertise in new procedures. Our failure to successfully transition to smaller geometry process technologies could impair our competitive position. In order to remain competitive, we have made, and expect to continue to make, significant investments in research and development. We expect the dollar amount of research and development expenses to increase for the foreseeable future, due to the increasing complexity and number of products we plan to develop. If we fail to develop new and enhanced products and technologies, if we focus on technologies that do not become widely adopted, or if new competitive technologies that we do not support, become widely accepted, demand for our products may be reduced. Significant investments in unsuccessful research and development efforts could materially adversely affect our business, financial condition and results of operations. In addition, increased investments in research and development could cause our cost structure to fall out of alignment with demand for our products, which would have a negative impact on our financial results.

Our business, financial condition and results of operations could be adversely affected by the political and economic conditions of the countries in which we conduct business and other factors related to our international operations.

A majority of our products are produced and sourced internationally and our international revenue represents a significant percentage of our overall revenue. In addition, as of November 4, 2018, approximately 46% of our employees are located outside the U.S. Multiple factors relating to our international operations and to particular countries in which we operate could have a material adverse effect on our business, financial condition and results of operations. These factors include:

- changes in political, regulatory, legal or economic conditions or geopolitical turmoil, including terrorism, war or political or military coups, or civil disturbances or political instability;
-

restrictive governmental actions, such as restrictions on the transfer or repatriation of funds and foreign investments, data privacy regulations and trade protection measures, including increasing protectionism, import/export restrictions, import/export duties and quotas, trade sanctions and customs duties and tariffs, all of which have increased under the current U.S. administration;

- uncertainty regarding social, political and trade policies in the U.S. and abroad;
- disruptions of capital and trading markets and currency fluctuations, which may result in our products becoming too expensive for foreign customers or foreign-sourced materials and services becoming more expensive for us;
- difficulty in obtaining product distribution and support, and transportation delays;
- potential inability to localize software products for a significant number of international markets;
- difficulty in conducting due diligence with respect to business partners in certain international markets;
- public health or safety concerns;
- nationalization of businesses and expropriation of assets; and
- changes in tax laws.

A significant legal risk associated with conducting business internationally is compliance with the various and differing laws and regulations, including anti-corruption and anti-bribery laws and regulations, of the countries in which we do business, antitrust and competition laws, data privacy laws, money-laundering regulations and export regulations. In addition, the laws in various countries are constantly evolving and may, in some cases, conflict with each other. Although our Code of Ethics and Business Conduct and other policies prohibit us, our employees and our agents from engaging in unethical business practices, there can be no assurance that all of our employees or agents will refrain from acting in violation of our related anti-corruption policies and procedures. Any such violation could have a material adverse effect on our business.

Our business is subject to various governmental regulations, and compliance with these regulations may cause us to incur significant expense. If we fail to maintain compliance with applicable regulations, we may be forced to cease the manufacture and distribution of certain products, and we could be subject to civil or criminal penalties.

Our business is subject to various international laws and other legal requirements, including packaging, product content, labor and import/export regulations, such as the U.S. Export Administration Regulations, and many of our semiconductor products are regulated or sold into regulated industries. These laws and regulations are complex, change frequently, have generally become more stringent over time and may intensify under the current U.S. administration. We may be required to incur significant expense to comply with, or to remedy violations of, these regulations. In addition, if our customers fail to comply with these regulations, we may be required to suspend sales to these customers, which could negatively impact our results of operations.

In addition, the manufacture and distribution of our semiconductors must comply with various laws and adapt to changes in regulatory requirements as they occur. For example, if a country in which our products are manufactured or sold sets technical standards that are not widely shared, it may require us to stop distributing our products commercially until they comply with such new standards, lead certain of our customers to suspend imports of their products into that country, require manufacturers in that country to manufacture products with different technical standards and disrupt cross-border manufacturing relationships, any of which could have a material adverse effect on our business, financial condition and results of operations. If we fail to comply with these requirements, we could also be required to pay civil penalties or face criminal prosecution. In addition, it is expected that the current U.S. administration’s trade policy will promote U.S. manufacturing and manufacturers. It is unclear what effect this will have on us as a multinational company that conducts business world-wide, or on our suppliers, customers, contract manufacturers and OEMs.

Our products and operations are also subject to the rules of industrial standards bodies, like the International Standards Organization, as well as regulation by other agencies, such as the U.S. Federal Communications Commission. If we fail to adequately address any of these rules or regulations, our business could be harmed.

Data privacy regulations are expanding and compliance with, and any violations of, these regulations may cause us to incur significant expenses.

Privacy legislation, enforcement and policy activity in this area are expanding rapidly in many jurisdictions and creating a complex regulatory compliance environment. The cost of complying with and implementing these privacy-related and data protection measures could be significant. In addition, even our inadvertent failure to comply with federal, state or international privacy-related or data protection laws and regulations could result in proceedings against us by governmental entities or others, and substantial fines and damages. The theft, loss or misuse of personal data collected, used, stored or transferred by us to run our business could result in significantly increased business and security costs or costs related to defending legal claims.

We are subject to environmental, health and safety laws, which could increase our costs, restrict our operations and require expenditures that could have a material adverse effect on our results of operations and financial condition.

We are subject to a variety of international laws and regulations relating to the use, disposal, clean-up of and human exposure to, hazardous materials. Compliance with environmental, health and safety requirements could, among other things, require us to modify our manufacturing processes, restrict our ability to expand our facilities, or require us to acquire pollution control equipment, all of which can be very costly. Any failure by us to comply with such requirements could result in the limitation or suspension of the manufacture of our products, and could result in litigation against us and the payment of significant fines and damages by us in the event of a significant adverse judgment. In addition, complying with any cleanup or remediation obligations for which we are or become responsible could be costly and have a material adverse effect on our business, financial condition and results of operations.

Changing requirements relating to the materials composition of our semiconductor products, including the restrictions on lead and certain other substances in electronics that apply to specified electronics products sold in various countries, including the U.S., China, Japan, and in the European Union, increase the complexity and costs of our product design and procurement operations and may require us to re-engineer our products. Such re-engineering may result in excess inventory or other additional costs and could have a material adverse effect on our results of operations. We may also experience claims from employees from time to time with regard to exposure to hazardous materials or other workplace related environmental claims.

Social and environmental responsibility regulations, policies and provisions, as well as customer demand, may make our supply chain more complex and may adversely affect our relationships with customers.

There is an increasing focus on corporate social and environmental responsibility in the semiconductor industry, particularly with OEMs that manufacture consumer electronics. A number of our customers have adopted, or may adopt, procurement policies that include social and environmental responsibility provisions that their suppliers should comply with, or they may seek to include such provisions in their procurement terms and conditions. An increasing number of participants in the semiconductor industry are also joining voluntary social responsibility initiatives such as the U.N. Global Compact, a voluntary initiative for businesses to develop, implement and disclose sustainability policies and practices. These social and environmental responsibility provisions and initiatives are subject to change, can be unpredictable, and may be difficult and expensive for us to comply with, given the complexity of our supply chain and our significant outsourced manufacturing. If we are unable to comply, or are unable to cause our suppliers or contract manufacturers to comply, with such policies or provisions, a customer may stop purchasing products from us, and may take legal action against us, which could harm our reputation, revenue and results of operations.

In addition, as part of their corporate social and environmental responsibility programs, an increasing number of OEMs are seeking to source products that do not contain minerals sourced from areas where proceeds from the sale of such minerals are likely to be used to fund armed conflicts, such as in the Democratic Republic of Congo. This could adversely affect the sourcing, availability and pricing of minerals used in the manufacture of semiconductor devices, including our products. Since our supply chain is complex, we are not currently able to definitively ascertain the origins of all of the minerals and metals used in our products. As a result, we may face difficulties in satisfying these customers’ demands, which may harm our sales and operating results.

The average selling prices of semiconductor products in our markets have often decreased rapidly and may do so in the future, which could harm our revenue and gross profit.

The semiconductor products we develop and sell are used for high volume applications. As a result, the prices of those products have often decreased rapidly. Gross profit on our products may be negatively affected by, among other things, pricing pressures from our customers. In the past, we have reduced the average selling prices of our products in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. In addition, some of our customer agreements provide for volume-based pricing and product pricing roadmaps, which can also reduce the average selling prices of our products over time. Our margins and financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing manufacturing costs, or developing new and higher value-added products on a timely basis.

A breach of our security systems may have a material adverse effect on our business.

Our security systems are designed to maintain the physical security of our facilities and protect our customers’, suppliers’ and employees’ confidential information, as well as our own proprietary information. However, we are also dependent on a number of third-party cloud-based and other service providers of critical corporate infrastructure services relating to, among other things, human resources, electronic communication services and certain finance functions, and we are, out of necessity, dependent on the security systems of these providers.

Accidental or willful security breaches or other unauthorized access by third parties or our employees or contractors of our facilities, our information systems or the systems of our cloud-based or other service providers, or the existence of computer viruses or malware in our or their data or software could expose us to a risk of information loss and misappropriation of proprietary and confidential information, including information relating to our products or customers and the personal information of our employees. In addition, we have, from time to time, also been subject to unauthorized network intrusions and malware on our own IT networks. Although we continually seek to improve our countermeasures to prevent such incidents, we may be unable to anticipate every scenario and it is possible that certain cyber threats or vulnerabilities will be undetected or unmitigated in time to prevent an attack on us and our customers.

Certain of our software products are intended to manage and secure IT infrastructures and environments, and as a result, we expect these products to be ongoing targets of cybersecurity attacks. Open source code or other third-party software used in our infrastructure and products could also be targeted. Additionally, we use third-party data centers, including for part of our SaaS business, that may also be subject to hacking incidents. Although we continually seek to improve our countermeasures to prevent such incidents, we may be unable to anticipate every scenario and it is possible that certain cyber threats or vulnerabilities will be undetected or unmitigated in time to prevent an attack on us and our customers. Cybersecurity attacks could require significant expenditures of our capital and diversion of our resources. Additionally, efforts by hackers or others could cause interruptions, delays or cessation of our product licensing, or modification of our software, which could cause us to lose existing or potential customers. A successful cybersecurity attack involving our products and IT infrastructure could also negatively impact the market perception of their effectiveness.

Any theft or misuse of confidential, personally identifiable or proprietary information could disrupt our business and result in, among other things, unfavorable publicity, damage to our reputation, loss of our trade secrets and other competitive information, difficulty in marketing our products, allegations by our customers that we have not performed our contractual obligations, litigation by affected parties and possible financial obligations for liabilities and damages related to the theft or misuse of such information, as well as fines and other sanctions resulting from any related breaches of data privacy regulations, any of which could have a material adverse effect on our business, profitability and financial condition. Since the techniques used to obtain unauthorized access to systems or to otherwise sabotage them, change frequently and are often not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures.

We are required to assess our internal control over financial reporting on an annual basis and any adverse findings from such assessment could result in a loss of investor confidence in our financial reports, significant expense to remediate any internal control deficiencies and ultimately have an adverse effect on our stock price.

We are required to assess the effectiveness of our internal control over financial reporting annually, as required by Section 404 of the Sarbanes-Oxley Act. Even though, as of November 4, 2018, we concluded that our internal control over financial reporting was effective, we need to maintain our processes and systems and adapt them as our business grows and changes, including to reflect our integration of CA, as well as any future acquisitions we may undertake. This continuous process of maintaining and adapting our internal controls and complying with Section 404 is expensive, time consuming and requires significant management attention. We cannot be certain that our internal control measures will continue to provide adequate control over our financial processes and reporting and ensure compliance with Section 404. Furthermore, as we grow our business or acquire other businesses, our internal controls may become more complex and we may require significantly more resources to ensure they remain effective. Failure to implement required new or improved controls, or difficulties encountered in the implementation of such controls, either in our existing business or in businesses that we acquire, could harm our operating results or cause us to fail to meet our reporting obligations. If we or our independent registered public accounting firm identify material weaknesses in our internal controls, the disclosure of that fact, even if quickly remedied, may cause investors to lose confidence in our financial statements and the trading price of our common stock may decline.

Remediation of a material weakness could require us to incur significant expenses and if we fail to remedy any material weakness, our financial statements may be inaccurate, we may be required to restate our financial statements, our ability to report our financial results on a timely and accurate basis may be adversely affected, our access to the capital markets may be restricted, the trading price of our common stock may decline, and we may be subject to sanctions or investigation by regulatory authorities, including the SEC or The Nasdaq Global Select Market.

Fluctuations in foreign exchange rates could result in losses.

We operate global businesses and our consolidated financial results are reported in U.S. dollars. However, some of the revenue and expenses of our foreign subsidiaries are denominated in local currencies. Fluctuations in foreign exchange rates against the U.S. dollar could result in substantial changes in reported revenues and operating results due to the foreign exchange impact of translating these transactions into U.S. dollars.

In the normal course of business, we employ various hedging strategies to partially mitigate these risks, including the use of derivative instruments. These strategies may not be effective in protecting us against the effects of fluctuations in foreign exchange rates. As a result, fluctuations in foreign exchange rates could result in financial losses.

The enactment of legislation implementing changes in taxation of international business activities, the adoption of other corporate tax reform policies, or changes in tax legislation or policies could materially impact our financial position and results of operations.

Corporate tax reform, base-erosion efforts and tax transparency continue to be high priorities in many tax jurisdictions where we have business operations. As a result, policies regarding corporate income and other taxes in numerous jurisdictions are under heightened scrutiny and tax reform legislation is being proposed or enacted in a number of jurisdictions. For example, the Tax Cuts and Jobs Act, or the 2017 Tax Reform Act, adopting broad U.S. corporate income tax reform will, among other things, reduce the U.S. corporate income tax rate, but will impose base-erosion prevention measures on earnings of non-U.S. subsidiaries of U.S. entities as well as the transition tax on mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations. There is no assurance that the final determination of our income tax liability will not be materially different than what is reflected in our income tax provisions and accruals.

In addition, many countries are beginning to implement legislation and other guidance to align their international tax rules with the Organisation for Economic Co-operation and Development’s Base Erosion and Profit Shifting recommendations and action plan that aim to standardize and modernize global corporate tax policy, including changes to cross-border tax, transfer pricing documentation rules, and nexus-based tax incentive practices. As a result of the heightened scrutiny of corporate taxation policies, prior decisions by tax authorities regarding treatments and positions of corporate income taxes could be subject to enforcement activities, and legislative investigation and inquiry, which could also result in changes in tax policies or prior tax rulings. Any such changes in policies or rulings may also result in the taxes we previously paid being subject to change.

Due to the large scale of our international business activities any substantial changes in international corporate tax policies, enforcement activities or legislative initiatives may materially adversely affect our business, the amount of taxes we are required to pay and our financial condition and results of operations generally.

If the tax incentive or tax holiday arrangements we have negotiated in Singapore and other jurisdictions change or cease to be in effect or applicable, in part or in whole, for any reason, or if our assumptions and interpretations regarding tax laws and incentive or holiday arrangements prove to be incorrect, the amount of corporate income taxes we have to pay could significantly increase.

Our operations are currently structured to benefit from the various tax incentives and tax holidays extended to us in various jurisdictions to encourage investment or employment. For example, one of the tax incentives from the Singapore Economic Development Board, an agency of the Government of Singapore, provides that any qualifying income we earn in Singapore is subject to a tax incentive or reduced rates of Singapore income tax. Subject to our compliance with the conditions specified in these incentives and legislative developments, this Singapore tax incentive is presently expected to expire in fiscal year 2020, subject in certain cases to potential extensions, which we may or may not be able to obtain, and any subsequent changes in incentive scope. Absent this tax incentive, the corporate income tax rate that would otherwise apply to our Singapore taxable income would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. The tax incentives and tax holiday that we have obtained are also subject to our compliance with various operating and other conditions and may, in some instances, be amended or terminated prior to their scheduled termination date by the relevant governmental authority. If we cannot, or elect not to, comply with the operating conditions included in any particular tax incentive or tax holiday, we could, in some instances, be required to refund previously realized material tax benefits, or if such tax incentive or tax holiday is terminated prior to its expiration absent a new incentive applying, we will lose the related tax benefits earlier than scheduled. Depending on the incentive at issue, we could also be required to modify our operational structure and tax strategy, which may not be as beneficial to us as the benefits provided under the present arrangements. The effect of these tax incentives and tax holiday was to increase the benefit from income taxes by approximately $590 million and increase diluted net income per share by $1.37 for fiscal year 2018. For fiscal years 2017 and 2016, the effect of these tax incentives and tax holiday, in the aggregate, was to reduce the overall provision for income taxes by approximately $237 million and $169 million, respectively, increase diluted net income per share by $0.56 for fiscal year 2017, and reduce diluted net loss per share by $0.44 for fiscal year 2016.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded, we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows.

Our overall cash tax costs are affected by a number of factors, including reorganizations or restructurings of our businesses or assets, jurisdictional revenue mix and changes in tax regulations or policy, and may be further impacted by the Redomiciliation Transaction, all of which could materially, adversely affect financial results.

We are a multinational company subject to tax in various tax jurisdictions. Significant judgment is required in determining our worldwide provision for income taxes. In the ordinary course of our business, there are many transactions where the ultimate tax determination is uncertain. Additionally, our calculations of income taxes payable currently and on a deferred basis are based on our interpretations of applicable tax laws in the jurisdictions in which we are required to file tax returns.

Our provision for income taxes is subject to volatility and could be adversely affected by numerous factors including:

- reorganization or restructuring of our businesses, tangible and intangible assets, outstanding indebtedness and corporate structure, including the Redomiciliation Transaction;
- jurisdictional mix of our income and assets, and the resulting tax effects of differing tax rates in different countries;
- changes in the allocation of income and expenses, including adjustments related to changes in our corporate structure, acquisitions or tax law;
- changes in transfer pricing rules or methods of applying these rules;
- changes in tax laws, including in the U.S., changes to the taxation of earnings of foreign subsidiaries, the deductibility of expenses attributable to income and foreign tax credit rules;

- tax effects of increases in non-deductible employee compensation;
- changes in tax accounting rules or principles and in the valuation of deferred tax assets and liabilities;
- outcomes of income tax audits; and
- modifications, expiration, lapses or termination of tax credits or incentives.

We have also adopted transfer pricing policies between our affiliated entities. Our policies call for the provision of services, the sale of products, the advance of financing and grant of licenses from one affiliate to another at prices that we believe are negotiated on an arm's length basis. Our taxable income in any jurisdiction is dependent upon acceptance of our operational practices and intercompany transfer pricing by local tax authorities as being on an arm's length basis. Due to inconsistencies in application of the arm's length standard among taxing authorities, as well as lack of comprehensive treaty-based protection, transfer pricing challenges by tax authorities could, if successful, result in adjustments for prior or future years. As a result of these adjustments, we could become subject to higher taxes and our earnings and results of operations would be adversely affected in any period in which such determination is made.

Although we believe our tax estimates are reasonable, there is no assurance that the final determination of our income tax liability will not be materially different than what is reflected in our income tax provisions and accruals. Significant judgment is required to determine the recognition and measurement of tax liabilities prescribed in the relevant accounting guidance for uncertainty in income taxes. The accounting guidance for uncertainty in income taxes applies to all income tax positions, which, if resolved unfavorably, could adversely impact our provision for income taxes and our payment obligation with respect to any such taxes.

In addition, we are subject to, and are under, tax audit in various jurisdictions, and such jurisdictions may assess additional income tax against us. Although we believe our tax positions are reasonable, the final determination of tax audits could be materially different from our income tax provisions and accruals. The ultimate result of an audit could have a material adverse effect on our results of operations and cash flows in the period or periods for which that determination is made.

The Redomiciliation Transaction will likely increase our cash tax cost.

As a result of the Redomiciliation Transaction and the effects of the 2017 Tax Reform Act, we expect our cash tax costs and overall effective cash tax rate will increase. There is still significant uncertainty as to how the 2017 Tax Reform Act will be implemented and as a result, our estimates of the overall cash tax impact of the Redomiciliation Transaction are expected to change as we continue to refine our analysis and as additional guidance becomes available. There is no assurance that the final determination of our income tax liability will not be materially different than what is reflected in our income tax provisions and accruals. Significant judgment is required to determine the recognition and measurement of tax liabilities prescribed in the relevant accounting guidance for uncertainty in income taxes.

The Internal Revenue Service may not agree that prior to the Redomiciliation Transaction Broadcom-Singapore should have been treated as a foreign corporation for U.S. federal income tax purposes.

Although Broadcom-Singapore is a Singapore entity, the Internal Revenue Service, or IRS, may assert that following our acquisition of BRCM, Broadcom-Singapore should have been treated as a U.S. corporation for U.S. federal income tax purposes pursuant to Section 7874 of the Internal Revenue Code of 1986, as amended, or the Code. If the IRS were to determine that under Section 7874 of the Code, the former shareholders of BRCM held at least 60% of the vote or value of the ordinary shares of Broadcom-Singapore immediately after our acquisition of BRCM, such percentage referred to as the "Section 7874 Percentage", Broadcom-Singapore would be treated as a "surrogate foreign corporation" and several limitations could then apply to BRCM. For example, BRCM would be prohibited from using its net operating losses, foreign tax credits or other tax attributes to offset the income or gain recognized by reason of the transfer of property to a foreign related person during the 10-year period following our acquisition of BRCM or any income received or accrued during such period by reason of a license of any property by BRCM to a foreign related person. Moreover, in such case, Section 4985 of the Code and rules related thereto would impose an excise tax on the value of certain stock compensation held directly or indirectly by certain BRCM "disqualified individuals" (including former officers and directors of BRCM) at a rate equal to 15%, but only if a gain is otherwise recognized by BRCM former shareholders as a result of our acquisition of BRCM. If the IRS were to determine the Section 7874 Percentage was 80% or more, then Broadcom-Singapore would be treated as a U.S. corporation for U.S. federal income tax purposes.

While we believe the Section 7874 Percentage was significantly less than 60%, determining the Section 7874 Percentage is complex and is subject to factual and legal uncertainties. There can be no assurance that the IRS will agree with our position.

Risks Relating to Our Indebtedness

Our substantial indebtedness could adversely affect our financial health and our ability to raise additional capital to fund our operations or potential acquisitions, could limit our ability to react to changes in the economy or our industry, and exposes us to interest rate risk to the extent of our variable rate indebtedness and prevent us from fulfilling our obligations under our indebtedness.

As of November 4, 2018, our total consolidated indebtedness under our senior unsecured notes that were issued and sold in January 2017 and October 2017, collectively the 2017 Senior Notes, was $17,550 million. Subsequent to the end of our fiscal year 2018, we borrowed $18 billion in term loans to finance the CA Merger, or the 2019 Term Loans, and we assumed $2.25 billion of CA's outstanding senior unsecured notes. We expect to maintain heightened levels of indebtedness going forward, in part due to our ongoing dividend and stock buy-back programs.

Our substantial indebtedness could have important consequences including:

- increasing our vulnerability to adverse general economic and industry conditions;
- exposing us to interest rate risk due to our variable rate 2019 Term Loans, which we do not typically hedge against;
- limiting our flexibility in planning for, or reacting to, changes in the economy and the semiconductor industry;
- placing us at a competitive disadvantage compared to our competitors with less indebtedness;
- making it more difficult to borrow additional funds in the future to fund growth, acquisitions, working capital, capital expenditures and other purposes; and
- potentially requiring us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund our other business needs.

In addition, our variable rate indebtedness may use LIBOR as a benchmark for establishing the rate. LIBOR is the subject of recent national, international and other regulatory guidance and proposals for reform. These reforms and other pressures may cause LIBOR to disappear entirely or to perform differently than in the past. The consequences of these developments cannot be entirely predicted, but could include an increase in the cost of our variable rate indebtedness.

We receive debt ratings from the major credit rating agencies in the U.S. Factors that may impact our credit ratings include debt levels, planned asset purchases or sales and near-term and long-term production growth opportunities. Liquidity, asset quality, cost structure, reserve mix and commodity pricing levels could also be considered by the rating agencies. While we are focused on maintaining investment grade ratings from these agencies, we may be unable to do so. Any downgrade in our credit rating or the ratings of our indebtedness, or adverse conditions in the debt capital markets, could:

- adversely affect the trading price of, or market for, our debt securities;
- increase interest expense under our 2019 Term Loans;
- increase the cost of, and adversely affect our ability to refinance, our existing debt; and

- adversely affect our ability to raise additional debt.

The instruments governing our indebtedness impose certain restrictions on our business.

The indentures governing the 2017 Senior Notes contain certain covenants imposing restrictions on our business. These restrictions may affect our ability to operate our business, to plan for, or react to, changes in the market conditions or our capital needs and may limit our ability to take advantage of potential business opportunities as they arise. The restrictions placed on us include limitations on our ability to incur certain secured debt, enter into certain sale and lease-back transactions and consolidate, merge, sell or otherwise dispose of all or substantially all of our assets. In addition, the indentures contain customary events of default upon the occurrence of which, after any applicable grace period, the noteholders would have the ability to immediately declare the debt due and payable. In such event, we may not have sufficient available cash to repay such debt at the time it becomes due, or be able to refinance such debt on acceptable terms or at all. Any of the foregoing could materially adversely affect our business, financial condition and results of operations.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on, and to refinance our debt, depends on our future performance, which is subject to economic, financial, competitive and other factors. Our business may not continue to generate cash flow from operations in the future sufficient to satisfy our obligations under our current indebtedness and any future indebtedness we may incur and to make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as reducing or delaying investments or capital expenditures, selling assets, refinancing or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our outstanding indebtedness or future indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms when needed, which could result in a default on our indebtedness.

Risks Relating to Owning Our Common Stock

At times, our stock price has been volatile and it may fluctuate substantially in the future, which could result in substantial losses for our investors as well as class action litigation against us and our management which could cause us to incur substantial costs and divert our management's attention and resources.

The trading price of our common stock has, at times, fluctuated significantly and could be subject to wide fluctuations in response to any of the risk factors listed in this "Risk Factors" section, and others, including:

- actual or anticipated fluctuations in our financial condition and operating results;
- issuance of new or updated research or other reports by securities analysts;
- fluctuations in the valuation and results of operations of our significant customers as well as companies perceived by investors to be comparable to us;
- announcements of proposed acquisitions by us or our competitors;
- announcements of, or expectations of additional debt or equity financing transactions;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our common stock;
- changes in our dividend or stock repurchase policies; and
- unsubstantiated news reports or other inaccurate publicity regarding us or our business.

These fluctuations are often unrelated or disproportionate to our operating performance. Broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or currency fluctuations, may negatively impact the market price of our common stock. You may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. We are also the subject of a number of lawsuits stemming from our acquisitions. Securities litigation against us, including the lawsuits related to such transactions, could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

The amount and frequency of our stock repurchases may fluctuate.

While we expect to continue to allocate a substantial amount of our free cash flow to stock repurchases, the amount, timing and execution of our stock repurchase program may fluctuate based on our priorities for the use of cash for other purposes. These purposes include operational spending, capital spending, acquisitions, and returning cash to our stockholders as dividend payments. Changes in cash flows, tax laws and our stock price could also impact our stock repurchase program.

A substantial amount of our stock is held by a small number of large investors and significant sales of our common stock in the public market by one or more of these holders could cause our stock price to fall.

As of September 30, 2018, we believe 12 of our 20 largest stockholders were active institutional investors who held approximately 34% of our outstanding shares of common stock in the aggregate, with Capital World Investors being our largest stockholder with approximately 10% of our outstanding shares of common stock. These investors may sell their shares at any time for a variety of reasons and such sales could depress the market price of our common stock. In addition, any such sales of our common stock by these entities could also impair our ability to raise capital through the sale of additional equity securities.

There can be no assurance that we will continue to declare cash dividends.

Our Board has adopted a dividend policy pursuant to which we currently pay a cash dividend on our common stock on a quarterly basis. The declaration and payment of any dividend is subject to the approval of our Board and our dividend may be discontinued or reduced at any time. There can be no assurance that we will declare cash dividends in the future in any particular amounts, or at all.

Future dividends, if any, and their timing and amount, may be affected by, among other factors: management’s views on potential future capital requirements for strategic transactions, including acquisitions; earnings levels; contractual restrictions; our stock repurchase program; cash position and overall financial condition; and changes to our business model. The payment of cash dividends is restricted by applicable law, contractual restrictions and our corporate structure. Because we are a holding company, our ability to pay cash dividends is also limited by restrictions or limitations on our ability to obtain sufficient funds through dividends from subsidiaries.

Our actual operating results may differ significantly from our guidance.

From time to time, we release guidance regarding our future performance that represents our management's estimates as of the date of release. This guidance, which consists of forward-looking statements, is prepared by our management and is qualified by, and subject to, the assumptions and the other information contained or referred to in the release. Our guidance is not prepared with a view toward compliance with published guidelines of the American Institute of Certified Public Accountants, and neither any independent registered public accounting firm nor any other independent expert or outside party compiles, examines or reviews the guidance and, accordingly, no such person expresses any opinion or any other form of assurance with respect thereto.

Guidance is based upon a number of assumptions and estimates that, while presented with numerical specificity, is inherently subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond our control and are based upon specific assumptions with respect to future business decisions, some of which will change. We generally state possible outcomes as high and low ranges which are intended to provide a sensitivity analysis as variables are changed but are not intended to represent that actual results could not fall outside of these ranges. The principal reason that we release this data is to provide a basis for our management to discuss our business outlook with analysts and investors. We do not accept any responsibility for any projections or reports published by any such persons.

Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions of the guidance furnished by us will not materialize or will vary significantly from actual results, particularly any guidance relating to the results of operations of acquired businesses or companies as our management will, necessarily, be less familiar with their business, procedures and operations. Accordingly, our guidance is only an estimate of what management believes is realizable as of the date of release. Actual results will vary from the guidance and the variations may be material. Investors should also recognize that the reliability of any forecasted financial data will diminish the farther in the future that the data are forecast. In light of the foregoing, investors are urged to put the guidance in context and not to place undue reliance on it.

Any failure to successfully implement our operating strategy or the occurrence of any of the events or circumstances set forth in this Annual Report on Form 10-K could result in the actual operating results being different than the guidance, and such differences may be adverse and material.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We are headquartered in San Jose, California. We conduct our administration, manufacturing, research and development, sales and marketing in both owned and leased facilities. We believe that our owned and leased facilities are adequate for our present operations. We do not identify or allocate assets by operating segment.

As of November 4, 2018, our principal facilities consisted of:

(Square Feet)	United States	Other Countries	Total
Owned facilities [1]	2,633,188	525,352	3,158,540
Leased facilities [2]	899,745	1,509,765	2,409,510

Total facilities	3,532,933	2,035,117	5,568,050

[1] Includes 37,352 square feet of property owned in Singapore subject to 30-year land lease with the state authority expiring in September 2029, subject to renewal at our option. Also includes 318,000 square feet and 158,000 square feet of property owned in Malaysia subject to a 60-year land lease with the state authority expiring in May 2051 and October 2077, respectively, subject to renewal at our option.

[2] Building leases expire on varying dates through August 2037 and generally include renewals at our option.

ITEM 3. LEGAL PROCEEDINGS

The information set forth under Note 13. "Commitments and Contingencies" included in Part II, Item 8. of this Annual Report on Form 10-K, is incorporated herein by reference. For an additional discussion of certain risks associated with legal proceedings, see "Risk Factors" above.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER SALE AND PURCHASES OF EQUITY SECURITIES

Market Information

Broadcom common stock is listed on The Nasdaq Global Select Market under the symbol "AVGO".

Holders

As of November 30, 2018, there were 645 holders of record of our common stock. A substantially greater number of stockholders are "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

Dividends and Distributions

On December 6, 2018, we announced that our Board of Directors has declared a quarterly cash dividend of $2.65 per share, payable on December 28, 2018 to stockholders of record on December 19, 2018. Broadcom paid aggregate cash dividends and distributions of $2,998 million and $1,745 million in fiscal years 2018 and 2017, respectively.

Our Board reviews our dividend policy annually targeting a projected quarterly per share dividend amount for the full fiscal year, based on an assessment of our last fiscal year free cash flow (cash flows provided by operating activities less purchases of property, plant and equipment). However, the declaration and payment of any future cash dividends are at the discretion and approval of our Board and subject to our Board's continuing determination that they are in our best interests. Future dividend payments will also depend upon factors such as our free cash flow, earnings level, capital requirements, contractual restrictions, cash position, overall financial condition and any other factors deemed relevant by our Board.

The payment of cash dividends on our common stock is subject to compliance with Delaware General Corporate Law. Also, because we are a holding company, our ability to pay cash dividends on our common stock may be limited by restrictions on our ability to obtain sufficient funds through dividends from subsidiaries, including restrictions under the terms of agreements governing our indebtedness.

Issuer Purchases of Equity Securities

In April 2018, our Board of Directors authorized the repurchase of up to $12 billion of our common stock from time to time on or prior to November 3, 2019, the end of our fiscal year 2019. On December 5, 2018, our Board of Directors increased our stock repurchase program authorization by $6 billion.

The following table presents details of our various repurchases during the fiscal quarter ended November 4, 2018:

Period	Total Number of Shares Purchased	Average Price per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plan
	(In millions, except per share data)			
August 6, 2018 — September 2, 2018	—	$ —	—	$ 6,275
September 3, 2018 — September 30, 2018	2	$ 240.84	2	$ 5,807

October 1, 2018 — November 4, 2018	4	$	238.14	4	$	4,742
Total	6	$	238.96	6		

Repurchases under our stock repurchase program may be effected through a variety of methods, including open market or privately negotiated purchases in compliance with Rule 10b-18 promulgated under the Exchange Act, which may include purchases under plans complying with Rule 10b5-1 of the Exchange Act. The timing and number of shares of common stock repurchased will depend on a variety of factors, including price, general business and market conditions and alternative investment opportunities. We are not obligated to repurchase any specific number of shares of common stock, and we may suspend or discontinue our stock repurchase program at any time.

Table of Contents

Stock Performance Graph

The following graph shows a comparison of cumulative total return for our common stock, the Standard & Poor's 500 Stock Index, or S&P 500 Index, and the Philadelphia Semiconductor Index, or PHLX Semiconductor Index for the five fiscal years ended November 4, 2018. The total return graph and table assume that $100 was invested on November 1, 2013 (the last trading day of our fiscal year 2013) in each of Broadcom Inc. common stock, the S&P 500 Index and the PHLX Semiconductor Index and assume all dividends are reinvested. Indexes are calculated on a month-end basis.

The comparisons in the graph below are based on historical data and are not indicative of, or intended to forecast, the possible future performance of our common stock.

Comparison of Five Year Cumulative Total Return

Among Broadcom Inc., the S&P 500 Index and the PHLX Semiconductor Index

chart-eb31ef15f2a85212af9a01.jpg

	November 3, 2013	**November 2, 2014**	**November 1, 2015**	**October 30, 2016**	**October 29, 2017**	**November 4, 2018**
Broadcom Inc.	$ 100.00	$ 196.10	$ 283.46	$ 394.74	$ 600.59	$ 538.98
S&P 500 Index	$ 100.00	$ 116.93	$ 123.01	$ 128.57	$ 159.28	$ 171.34
PHLX Semiconductor Index	$ 100.00	$ 128.98	$ 136.60	$ 172.14	$ 270.13	$ 269.76

The graph and the table above shall not be deemed "filed" with the SEC for the purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing made by us with the SEC, regardless of any general incorporation language in such filing.

Securities Authorized for Issuance Under Equity Compensation Plans

The information required by this item regarding securities authorized for issuance under equity compensation plans is incorporated herein by reference to the definitive Proxy Statement for our 2019 annual meeting of stockholders to be filed with the SEC within 120 days after the end of fiscal year 2018.

Table of Contents

ITEM 6. SELECTED FINANCIAL DATA

The following table sets forth the selected consolidated financial data for Broadcom and should be read in conjunction with our annual consolidated financial statements and related notes and information included under the headings "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this Annual Report on Form 10-K.

Summary of Five Year Selected Financial Data

	Fiscal Year Ended (1)				
	November 4, 2018	October 29, 2017	October 30, 2016	November 1, 2015	November 2, 2014
	(In millions, except per share data)				
Statement of Operations Data: (2)					
Net revenue	$20,848	$17,636	$13,240	$ 6,824	$ 4,269
Gross margin (3)	$10,733	$ 8,509	$ 5,940	$ 3,553	$ 1,877
Operating expenses (3) (4)	$ 5,598	$ 6,126	$ 6,349	$ 1,921	$ 1,439
Income (loss) from continuing operations before income taxes	$ 4,545	$ 1,825	$(1,107)	$ 1,467	$ 342
Provision for (benefit from) income taxes (5)	$(8,084)	$ 35	$ 642	$ 76	$ 33
Income (loss) from continuing operations	$12,629	$ 1,790	$(1,749)	$ 1,391	$ 309
Net income (loss)	$12,610	$ 1,784	$(1,861)	$ 1,364	$ 263
Net income (loss) attributable to common stock	$12,259	$ 1,692	$(1,739)	$ 1,364	$ 263
Diluted income (loss) per share:					
Income (loss) per share from continuing operations	$ 28.48	$ 4.03	$ (4.57)	$ 4.95	$ 1.16
Loss per share from discontinued operations	(0.04)	(0.01)	(0.29)	(0.10)	(0.17)
Net income (loss) per share	$ 28.44	$ 4.02	$ (4.86)	$ 4.85	$ 0.99
Cash dividends declared and paid per share	$ 7.00	$ 4.08	$ 1.94	$ 1.55	$ 1.13

	November 4, 2018	October 29, 2017	October 30, 2016	November 1, 2015	November 2, 2014
	(In millions)				
Balance Sheet Data: (2)					
Cash and cash equivalents	$ 4,292	$11,204	$ 3,097	$ 1,822	$ 1,604
Total assets	$50,124	$54,418	$49,966	$10,515	$10,376
Debt and capital lease obligations	$17,493	$17,569	$13,642	$ 3,872	$ 5,395
Total equity	$26,657	$23,186	$21,876	$ 4,714	$ 3,243

---

(1)

Our fiscal year ends on the Sunday closest to October 31 in a 52-week year and on the first Sunday in November in a 53-week year. Our fiscal year ended November 4, 2018 was a 53-week fiscal year. All other fiscal years presented included 52 weeks.

(2) On November 17, 2017, we acquired Brocade for total consideration of approximately $6.0 billion. On February 1, 2016, we acquired BRCM for total consideration of approximately $35.7 billion. On May 5, 2015, we acquired Emulex Corporation for total consideration of approximately $587 million. On August 12, 2014, we acquired PLX Technology, Inc. for total consideration of approximately $308 million. On May 6, 2014, we acquired LSI for total consideration of approximately $6.5 billion. Our financial statements included the results of operations of the acquired companies and estimated fair value of assets acquired and liabilities assumed commencing as of their respective acquisition dates.

(3) We incurred acquisition-related costs and restructuring charges which were presented as part of both cost of products sold and operating expenses. Restructuring charges primarily reflect actions taken to implement planned cost reduction and restructuring activities in connection with each acquisition.

(4) In connection with our acquisition of BRCM in fiscal year 2016, amortization of acquisition-related intangible assets increased $1,624 million contributing to over 30 percent of the overall increase in operating expenses for fiscal year 2016.

(5) Our benefit from income taxes for fiscal year 2018 was primarily a result of the enactment of the 2017 Tax Reform Act, the Redomiciliation Transaction and income from continuing operations. For fiscal years 2017, 2016, 2015 and 2014, our provision for income taxes fluctuated mainly due to changes in the jurisdictional mix of income.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with "Selected Financial Data" and our consolidated financial statements and notes thereto which appear elsewhere in this Annual Report on Form 10-K. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under the caption "Risk Factors" or in other parts of this Annual Report on Form 10-K.

Overview

Broadcom Inc., or Broadcom, is a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions.

We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Through our fiscal year ended November 4, 2018, or fiscal year 2018, we had four reportable segments: wired infrastructure, wireless communications, enterprise storage and industrial & other.

Original equipment manufacturers, or OEMs, or their contract manufacturers, and distributors typically account for the substantial majority of our semiconductor sales. We have established strong relationships with leading OEM customers across multiple target markets and we have a direct sales force focused on supporting large OEMs. We also distribute a substantial portion of our products through our broad distribution network, and a significant amount of these sales are to large global electronic components distributors.

The demand for our semiconductor products has been affected in the past, and is likely to continue to be affected in the future, by various factors, including the following:

- general economic and market conditions in the semiconductor industry and in our target markets;
- our ability to define specifications for, develop or acquire, complete, introduce and market new products and technologies in a cost-effective and timely manner;
- the timing, rescheduling or cancellation of expected customer orders;
- the rate at which our present and future customers and end-users adopt our products and technologies in our target markets, and the rate at which our customers' products that include our technology are accepted in their markets; and
- the qualification, availability and pricing of competing products and technologies and the resulting effects on sales and pricing of our products.

Uncertainty in global economic conditions pose significant risks to our business. For example, customers may defer purchases in response to tighter credit and negative financial news, which would in turn adversely affect product demand and our results of operations.

Our fiscal year 2018 was a 53-week fiscal year compared to our fiscal year ended October 29, 2017, or fiscal year 2017, and our fiscal year ended October 30, 2016, or fiscal year 2016, which were 52-week fiscal years. The additional week in the first quarter of fiscal year 2018 resulted in higher net revenue, gross margin dollars, research and development expense, and selling general and administrative expense for fiscal year 2018, compared to the corresponding prior year periods.

Fiscal Year Highlights

Highlights during fiscal year 2018 include the following:

- We generated $8,880 million of cash from operations.
- We paid $7,258 million to repurchase shares of our common stock and $2,998 million for cash dividends and distributions.
- The income tax benefit of $8,084 million recognized primarily resulted from income tax benefits realized from the enactment of the U.S. Tax Cuts and Jobs Act, or the 2017 Tax Reform Act, and the impact of the Redomiciliation Transaction as defined below.

- We completed Redomiciliation Transaction discussed in more detail below, which caused the publicly traded parent company of Broadcom to be a Delaware corporation.

- On November 17, 2017, we completed the acquisition of Brocade Communication Systems Inc., or Brocade, for aggregate consideration of approximately $6.0 billion, or the Brocade Merger.

Redomiciliation to the United States from Singapore

As part of the plan to cause the publicly traded parent company of the Broadcom group of companies to be a Delaware corporation, after the close of market trading on April 4, 2018, Broadcom and Broadcom Limited, or Broadcom-Singapore, completed a statutory scheme of arrangement under Singapore law pursuant to which all Broadcom-Singapore outstanding ordinary shares were exchanged on a one-for-one basis for newly issued shares of Broadcom common stock and Broadcom-Singapore became an indirect wholly-owned subsidiary of Broadcom. This transaction is referred to as the Redomiciliation Transaction.

The financial information and results of operations in this Form 10-K for periods prior to April 4, 2018 relate to our predecessors, Broadcom-Singapore and Avago Technologies Limited, for accounting and financial reporting purposes and relate to Broadcom for periods after April 4, 2018, the effective date of the Redomiciliation Transaction.

In conjunction with the Redomiciliation Transaction, all outstanding exchangeable limited partnership units, or LP Units, of Broadcom Cayman L.P., or the Partnership, a subsidiary of Broadcom-Singapore, were mandatorily exchanged on a one-for-one basis for newly issued shares of Broadcom common stock. As a result, all the limited partners became common stockholders of Broadcom and Broadcom-Singapore redeemed all related outstanding special preference shares. Consequently, the limited partners no longer hold a noncontrolling interest in the Partnership and we subsequently deregistered the Partnership.

Recent Developments

Acquisition of CA, Inc.

On November 5, 2018, or the CA Merger Date, we acquired CA, Inc., or CA, for approximately $18.8 billion in aggregate cash purchase consideration, in exchange for all shares of CA common stock issued and outstanding immediately prior to the closing and assumed $2.25 billion of outstanding unsecured bonds, or the CA Merger. In addition, we assumed all unvested CA stock options, outstanding restricted stock awards, restricted stock units, or RSUs, and performance stock units held by continuing employees. All vested in-the-money CA stock options and director stock units were cashed out upon the completion of the CA Merger. We financed the CA Merger with $18 billion from borrowings under a term A facility entered into on the CA Merger Date, as well as cash on hand of the combined companies. See Note 16. “Subsequent Events” included in Part II, Item 8. of this Annual Report on Form 10-K for further detail.

We expect our reporting segments to change beginning in the first quarter of fiscal year 2019, as a result of the CA Merger that closed on November 5, 2018, the first day of our fiscal year 2019.

In connection with the CA Merger, we entered into a definitive agreement to sell Veracode, Inc., a wholly owned subsidiary of CA and provider of application security testing solutions, to Thoma Bravo, LLC for cash consideration of $950 million.

The discussions below related to our business, reporting segments and financial results for fiscal year 2018 and prior periods do not include any impact from or information relating to the CA Merger.

Acquisitions and Divestitures

The discussion and analysis in this section and the accompanying consolidated financial statements include the results of operations of acquired companies commencing on their respective acquisition dates.

Acquisition of Brocade Communications Systems, Inc.

On November 17, 2017, we acquired Brocade, or the Brocade Merger, for approximately $5.3 billion in cash in exchange for all shares of Brocade common stock issued and outstanding immediately prior to the effective time of the Brocade Merger and paid $701 million to retire Brocade's term loan. In addition, we assumed all unvested Brocade stock options, RSUs and performance stock units held by continuing employees. All vested in-the-money Brocade stock options, after giving effect to any acceleration, were cashed out upon the Brocade Merger.

We financed the Brocade Merger with the net proceeds from the issuance of our senior unsecured notes, issued during October 2017, or the October 2017 Senior Notes, as well as cash on hand. See Note 8. "Borrowings" included in Part II, Item 8. of this Annual Report on Form 10-K for further detail.

Following the Brocade Merger, on December 1, 2017, we sold Brocade's Internet Protocol Networking business, including the Ruckus Wireless and ICX Switch businesses, to ARRIS International plc for cash consideration of $800 million, before contractual working capital adjustments.

Acquisition of Broadcom Corporation

On February 1, 2016, Broadcom became the successor to Avago Technologies Limited, or Avago, and acquired Broadcom Corporation, or BRCM, in which, Avago shareholders exchanged their shares on a one-for-one basis for newly issued Broadcom shares, or the Broadcom Merger. BRCM shareholders received, in aggregate, approximately $16.8 billion in cash, 112 million Broadcom shares and 23 million partnership units in exchange for all shares of BRCM common stock, par value $0.0001 per share, issued and outstanding immediately prior to the effective time of the Broadcom Merger. In addition, we also paid $137 million in cash for vested BRCM equity awards. Broadcom also assumed unvested RSUs originally granted by BRCM and converted them into 6 million Broadcom RSUs.

The aggregate consideration for the Broadcom Merger was approximately $35.7 billion. We funded the cash portion of the Broadcom Merger with net proceeds from the issuance of $15.6 billion in term loans under a guaranteed, collateralized credit agreement, or the 2016 Credit Agreement, that we entered into at the time of closing of the Broadcom Merger, as well as cash on hand of the combined companies.

During fiscal year 2016, we completed the sales of certain non-core BRCM businesses for aggregate cash proceeds of $830 million and recognized an aggregate gain of $36 million from the sales.

Net Revenue

Substantially all of our net revenue is derived from sales of a broad range of semiconductor devices that are incorporated into electronic products, as well as from modules, switches and subsystems. We have four reportable segments: wired infrastructure, wireless communications, enterprise storage and industrial & other, which align with our target markets.

Our overall net revenue, as well as the percentage of total net revenue generated by sales in each of our segments, has varied from quarter to quarter, due largely to fluctuations in end-market demand, including the effects of seasonality, which are discussed in detail below under "Seasonality".

OEMs or their contract manufacturers and distributors typically account for the substantial majority of our sales. We sell products directly to OEMs, and other end customers, many of whom also purchase products from our distributors and who direct contract manufacturers to purchase products from us. We have established strong relationships with leading OEM customers across multiple target markets and we have a direct sales force focused on supporting large OEMs. Distributors also account for a significant portion of our business and we recognize revenue upon delivery of product to the distributors, which can cause our quarterly net revenue to fluctuate significantly. Such revenue is reduced for estimated returns and distributor allowances.

Costs and Expenses

Total cost of products sold. Cost of products sold consists primarily of the costs for semiconductor wafers and other materials as well as the costs of assembling and testing those products and materials. Such costs include personnel and overhead related to our manufacturing operations, which include stock-based compensation expense; related occupancy; computer services; equipment costs; manufacturing quality; order fulfillment; warranty adjustments; inventory adjustments, including write-downs for inventory obsolescence; and acquisition costs, which include direct transaction costs and integration-related costs. Total costs of products sold also includes the purchase accounting effect on inventory, amortization of acquisition-related intangible assets and restructuring charges.

Although we outsource a significant portion of our manufacturing activities, we do have some proprietary semiconductor fabrication facilities. If we are unable to utilize our owned fabrication facilities at a desired level, the fixed costs associated with these facilities will not be fully absorbed, resulting in higher average unit costs and lower gross margins.

Research and development. Research and development expense consists primarily of personnel costs for our engineers engaged in the design and development of our products and technologies, including stock-based compensation expense. These expenses also include project material costs, third-party fees paid to consultants, prototype development expense, allocated facilities costs and other corporate expenses and computer services costs related to supporting computer tools used in the engineering and design process.

Selling, general and administrative. Selling expense consists primarily of compensation and associated costs for sales and marketing personnel, including stock-based compensation expense, sales commissions paid to our independent sales representatives, advertising costs, trade shows, corporate marketing, promotion, travel related to our sales and marketing operations, related occupancy and equipment costs, and other marketing costs. General and administrative expense consists primarily of compensation and associated costs for executive management, finance, human resources and other administrative personnel, including stock-based compensation expense, outside professional fees, allocated facilities costs, acquisition-related costs and other corporate expenses.

Amortization of acquisition-related intangible assets. In connection with our acquisitions, we recognize intangible assets that are being amortized over their estimated useful lives of 1 year to 25 years. We also recognize goodwill, which is not amortized, and in-process research and development, or IPR&D, which is initially capitalized as an indefinite-lived intangible asset, in connection with acquisitions. Upon completion of each underlying project, IPR&D assets are reclassified as an amortizable purchased intangible asset and amortized over their estimated useful lives.

Restructuring, impairment and disposal charges. Restructuring, impairment and disposal charges consist primarily of compensation costs associated with employee exit programs, alignment of our global manufacturing operations, rationalizing product development program costs, in-process research and development impairment, fixed asset impairment, facility and lease abandonments, and other exit costs, including curtailment of service or supply agreements.

Interest expense. Interest expense includes coupon interest, commitment fees, accretion of original issue discount and amortization of debt issuance costs, and expenses related to debt modification.

Other income, net. Other income, net includes interest income, gains (losses) on foreign currency remeasurement, and other miscellaneous items.

Provision for income taxes. The 2017 Tax Reform Act made significant changes to the U.S. Internal Revenue Code, including (1) a decrease in the U.S. corporate tax rate from 35% to 21% effective for tax years beginning after December 31, 2017, (2) the accrual of U.S. income tax on foreign earnings when earned, allowing certain foreign dividends to then be tax-exempt, rather than deferring such income tax payments until the foreign earnings are repatriated into the U.S., and (3) the transition tax on the mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations, or the Transition Tax. Following the enactment of the 2017 Tax Reform Act, the Securities and Exchange Commission, or SEC, issued guidance for situations when there is insufficient information to complete the accounting for certain income tax effects of the 2017 Tax Reform Act. Based on our interpretation of the 2017 Tax Reform Act and the SEC's guidance, we recognized an income tax benefit of $7,278 million during fiscal year 2018. We also recognized an income tax benefit of $1,162 million primarily as a result of the Redomiciliation Transaction.

We have structured our operations to maximize the benefit from tax incentives extended to us in various jurisdictions to encourage investment or employment. One of the tax incentives from the Singapore Economic Development Board, an agency of the Government of Singapore, provides that any qualifying income earned in Singapore is subject to a tax incentive or reduced rates of Singapore income tax. Subject to our compliance with the conditions specified in this incentive and legislative developments, this Singapore tax incentive is presently expected to expire in fiscal year 2020, subject in certain cases to potential extensions, which we may or may not be able to obtain. Absent this tax incentive, the corporate income tax rate in Singapore that would otherwise apply to us would be 17%. We also have a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028.

The tax incentives and tax holiday that we have obtained are also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with the operating conditions included in any particular tax incentive, we will lose the related tax benefits and we could be required to refund previously realized material tax benefits. Depending on the incentive at issue, we could also be required to modify our operational structure and tax strategy, which may not be as beneficial to us as the benefits provided under the present tax concession arrangements. For fiscal year 2018, the effect of these tax incentives and tax holiday was to increase the benefit from income taxes by approximately $590 million. For fiscal years 2017 and 2016, the effect of these tax incentives and tax holiday was to reduce the overall provision for income taxes by approximately $237 million and $169 million, respectively.

Our interpretations and conclusions regarding the tax incentives are not binding on any taxing authority, and if our assumptions about tax and other laws are incorrect or if these tax incentives are substantially modified or rescinded we could suffer material adverse tax and other financial consequences, which would increase our expenses, reduce our profitability and adversely affect our cash flows. In addition, taxable income in any jurisdiction is dependent upon acceptance of our operational practices and intercompany transfer pricing by local tax authorities as being on an arm’s length basis. Due to inconsistencies in application of the arm’s length standard among taxing authorities, as well as lack of adequate treaty-based protection, transfer pricing challenges by tax authorities could, if successful, substantially increase our income tax expense.

Critical Accounting Estimates

The preparation of financial statements in accordance with generally accepted accounting principles in the United States, or GAAP, requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. We base our estimates and assumptions on current facts, historical experience and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the accrual of costs and expenses that are not readily apparent from other sources. Our actual financial results may differ materially and adversely from our estimates. Our critical accounting policies are those that affect our historical financial statements materially and involve difficult, subjective or complex judgments by management. Those policies include revenue recognition, business combinations, valuation of long-lived assets, intangible assets and goodwill, inventory valuation, income taxes, retirement and post-retirement benefit plan assumptions, stock-based compensation and employee bonus programs. See Note 2. "Summary of Significant Accounting Policies" included in Part II, Item 8. of this Annual Report on Form 10-K for further information on our critical accounting policies and estimates.

Revenue recognition. We recognize revenue from sales of our products to distributors upon delivery of product to the distributors. An allowance for distributor credits covering price adjustments is made based on our estimate of historical experience rates as well as considering economic conditions and contractual terms. To date, actual distributor claims activity has been materially consistent with the provisions we have made based on our historical estimates. However, because of the inherent nature of estimates, there is always a risk that there could be significant differences between actual amounts and our estimates. Different judgments or estimates could result in variances that might be significant to reported operating results. We also record reductions of revenue for rebates in the same period that the related revenue is recorded. We accrue 100% of potential rebates at the time of sale. We reverse the accrual of unclaimed rebate amounts as specific rebate programs contractually end and when we believe unclaimed rebates are no longer subject to payment and will not be paid. Thus, the reversal of unclaimed rebates may have a positive impact on our net revenue and net income in subsequent periods.

Certain of our product sales are sold in multiple-element arrangements including networking hardware with embedded software products and support, which are considered separate units of accounting. For certain of our products, software and non-software components function together to deliver the tangible products' essential functionality.

We allocate revenue to each element in a multiple-element arrangement based upon the relative selling price. When applying the relative selling price method, we determine the selling price for each deliverable using vendor-specific objective evidence, or VSOE, of selling price, if it exists, or third-party evidence, or TPE, of selling price. If neither VSOE nor TPE of selling price exist for a deliverable, we use our best estimate of selling price for that deliverable. Revenue allocated to each element is then recognized when the basic revenue recognition criteria are met for each element. Revenue related to support is deferred and recognized ratably over the contractual period.

We determine VSOE based on our normal pricing and discounting practices for the specific product or service when sold separately. In determining VSOE, we require that a substantial majority of the selling prices for a product or service fall within a reasonably narrow pricing range. For support, we consider stated renewal rates in determining VSOE.

In most instances, we are not able to establish VSOE for all deliverables in an arrangement with multiple elements. When VSOE cannot be established, we attempt to establish the selling price for each element based on TPE. When we are unable to establish selling price using VSOE or TPE, we use best estimated selling price, or BESP, in our allocation of the arrangement consideration. The objective of BESP is to determine the price at which we would transact a sale if the product or service were sold on a stand-alone basis.

We determine BESP for a product by considering multiple factors including, but not limited to, geographies, market conditions, competitive landscape, internal costs, gross margin objectives and pricing practices taking into consideration our go-to-market strategy.

Business combinations. Accounting for business combinations requires management to make significant estimates and assumptions, especially at the acquisition date, for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain of the intangible assets we have acquired include, but are not limited to, future expected cash flows from product sales, customer contracts and acquired technologies, expected costs to develop in-process research and development into commercially viable products, estimated cash flows from the projects when completed, and discount rates. The discount rates used to discount expected future cash flows to present value are typically derived from a weighted-average cost of capital analysis and adjusted to reflect inherent risks. Unanticipated events and circumstances may occur that could affect either the accuracy or validity of such assumptions, estimates or actual results.

Valuation of goodwill and long-lived assets. We perform an annual impairment review of our goodwill during the fourth fiscal quarter of each year, and more frequently if we believe indicators of impairment exist. The process of evaluating the potential impairment of goodwill is highly subjective and requires significant judgment. To review for impairment, we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more-likely-than-not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more-likely-than-not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit's net book value.

Determining the fair value of a reporting unit involves the use of significant estimates and assumptions. Our goodwill impairment test uses both the income approach and the market approach to estimate a reporting unit's fair value. The income approach is based on the discounted cash flow method that uses the reporting unit estimates for forecasted future financial performance including revenues, operating expenses, and taxes, as well as working capital and capital asset requirements. These estimates are developed as part of our long-term planning process based on assumed market segment growth rates and our assumed market segment share, estimated costs based on historical data and various internal estimates. Projected cash flows are then discounted to a present value employing a discount rate that properly accounts for the estimated market weighted-average cost of capital, as well as any risk unique to the subject cash flows. The market approach is based on weighting financial multiples of comparable companies and applies a control premium. A reporting unit's carrying value represents the assignment of various assets and liabilities, excluding certain corporate assets and liabilities, such as cash and debt.

We assess the impairment of long-lived assets including purchased in-process research and development, assets, property, plant and equipment, and intangible assets, whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, or (iii) significant negative industry or economic trends. The process of evaluating the potential impairment of long-lived assets under the accounting guidance on property, plant and equipment and other intangible assets is also highly subjective and requires significant judgment. In order to estimate the fair value of long-lived assets, we typically make various assumptions about the future prospects of our business or the part of our business that the long-lived asset relates to. We also consider market factors specific to the business and estimate future cash flows to be generated by the business, which requires significant judgment as it is based on assumptions about market demand for our products over a number of future years. Based on these assumptions and estimates, we determine whether we need to take an impairment charge to reduce the value of the long-lived asset stated on our consolidated balance sheet to reflect its estimated fair value. Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors, including external factors, such as the real estate market, industry and economic trends, and internal factors, such as changes in our business strategy and our internal forecasts. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, changes in assumptions and estimates could materially impact our reported financial results.

Inventory valuation. We regularly review inventory quantities on hand and record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. Demand for our products can fluctuate significantly from period to period. A significant decrease in demand could result in an increase in the amount of excess inventory quantities on hand. In addition, our industry is characterized by rapid technological change, frequent new product development and rapid product obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Additionally, our estimates of future product demand may prove to be inaccurate, which may cause us to understate or overstate both the provision required for excess and obsolete inventory and cost of products sold. Therefore, although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our results of operations.

Income taxes. Significant management judgment is required in developing our provision for income taxes, including the determination of deferred tax assets and liabilities and any valuation allowances that might be required against the deferred tax assets. We have considered projected future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for valuation allowances. If we determine that a valuation allowance is required, such adjustment to the deferred tax assets would increase our tax expense in the period in which such determination is made. Conversely, if we determine that a valuation allowance exceeds our requirement, such adjustment to the deferred tax assets would decrease tax expense in the period in which such determination is made. In evaluating the exposure associated with various tax filing positions, we accrue an income tax liability when such positions do not meet the more-likely-than-not threshold for recognition.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax law and regulations in a multitude of jurisdictions. We recognize potential liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on our estimate of whether, and the extent to which, additional taxes, interest and penalties will be due. If our estimate of income tax liabilities proves to be less than the actual amount ultimately assessed, a further charge to tax expense would be required. If the payment of these amounts ultimately proves to be unnecessary, the reversal of the accrued liabilities would result in tax benefits being recognized in the period when we determine the liabilities no longer exist.

Retirement and post-retirement benefit plan assumptions. Retirement and post-retirement benefit plan costs represent obligations that will ultimately be settled sometime in the future and therefore, are subject to estimation. Pension accounting is intended to reflect the recognition of future retirement and post-retirement benefit plan costs over the employees' average expected future service to us, based on the terms of the plans and investment and funding decisions. To estimate the impact of these future payments and our decisions concerning funding of these obligations, we are required to make assumptions using actuarial concepts within the framework of GAAP. One critical assumption is the discount rate used to calculate the estimated costs. Other important assumptions include the expected long-term return on plan assets, expected future salary increases, the health care cost trend rate, expected future increases to benefit payments, expected retirement dates, employee turnover, retiree mortality rates, and portfolio composition. We evaluate these assumptions at least annually.

The discount rate is used to determine the present value of future benefit payments at the relevant measurement dates — November 4, 2018 and October 29, 2017, for both U.S. and non-U.S. plans, in fiscal years 2018 and 2017, respectively. The U.S. discount rates are based on the results of matching expected plan benefit payments with cash flows from a hypothetical yield curve constructed with high-quality corporate bond yields. The discount rate for non-U.S. plans was based either on published rates for government bonds or use of a hypothetical yield curve constructed with high- quality corporate bond yields, depending on the availability of sufficient quantities of quality corporate bonds. Lower discount rates increase present values of the pension liabilities and subsequent year pension expense; higher discount rates decrease present values of the pension liabilities and subsequent year pension expense.

The U. S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy.

Actuarial assumptions are based on our best estimates and judgment. Material changes may occur in retirement benefit costs in the future if these assumptions differ from actual events or experience. We performed a sensitivity analysis on the discount rate, which is the key assumption in calculating U.S. pension and post-retirement benefit obligations as of November 4, 2018. Each change of 25 basis points in the discount rate assumption would have had an estimated $33 million impact on the benefit obligations as of November 4, 2018. Each change of 25 basis points in the discount rate assumption and expected rate of return assumption would have an estimated change of $1 million and $3 million, respectively, on annual net retirement benefit costs for fiscal year 2019.

Stock-based compensation expense. Stock-based compensation expense consists of expense for stock options and RSUs granted to employees and non-employees or assumed from acquisitions as well as expense associated with Broadcom employee stock purchase plan, or ESPP. We recognize compensation expense for time-based stock options and ESPP rights based on the estimated grant-date fair value method required under the authoritative guidance using the Black-Scholes valuation model.

Certain equity awards include both time-based and market-based conditions and are accounted for as market-based awards. The fair value of these market-based awards is estimated on the date of grant using a Monte Carlo simulation model.

Employee Bonus Programs. Our employee bonus programs, which are overseen by our Compensation Committee, or our Board, in the case of our Chief Executive Officer, provide for variable compensation based on the attainment of overall corporate annual targets and functional performance metrics. In the first fiscal quarter of the year, if management determines that it is probable that the targets and metrics will be achieved and the amounts can be reasonably estimated, a variable, proportional compensation accrual is recognized based on an assumed 100% achievement of the targets and metrics. The bonus payout levels can be greater if attainment of metrics and targets is greater than 100% and a portion of the payouts may not occur if a minimum floor of performance is not achieved. In subsequent quarters, we monitor and accrue for variable compensation expense based on our actual progress toward the achievement of the annual targets and metrics. The actual achievement of target metrics at the end of the fiscal year, which is subject to approval by our Compensation Committee, may result in the actual variable compensation amounts being significantly higher or lower than the relevant estimated amounts accrued in earlier quarters, which would result in a corresponding adjustment in the fourth fiscal quarter.

Fiscal Year Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal year ended November 4, 2018 is a 53-week fiscal year. Fiscal years 2017 and 2016 consisted of 52 weeks.

The financial statements included in Part II, Item 8. of this Annual Report on Form 10-K are presented in accordance with GAAP and expressed in U.S. dollars.

Table of Contents

Results of Operations

Fiscal Year 2018 Compared to Fiscal Year 2017

	Fiscal Year Ended			
	November 4, 2018	October 29, 2017	November 4, 2018	October 29, 2017
	(In millions)		(As a percentage of net revenue)	
Statements of Operations Data:				
Net revenue	$ 20,848	$ 17,636	100 %	100 %
Cost of products sold:				
Cost of products sold	7,021	6,593	34	38
Purchase accounting effect on inventory	70	4	—	—
Amortization of acquisition-related intangible assets	3,004	2,511	14	14
Restructuring charges	20	19	—	—
Total cost of products sold	10,115	9,127	48	52
Gross margin	10,733	8,509	52	48
Research and development	3,768	3,292	18	19
Selling, general and administrative	1,056	787	5	4
Amortization of acquisition-related intangible assets	541	1,764	3	10
Restructuring, impairment and disposal charges	219	161	1	1
Litigation settlements	14	122	—	1
Total operating expenses	5,598	6,126	27	35
Operating income	$ 5,135	$ 2,383	25 %	13 %

Net Revenue

Historically, a relatively small number of customers has accounted for a significant portion of our net revenue. Sales to distributors accounted for 34% and 28% of our net revenue for fiscal years 2018 and 2017, respectively. During fiscal year 2018, no direct customer represented more than 10% of our net revenue. Direct sales to Foxconn Technology Group companies (including Hon Hai Precision Industries) accounted for 14% of our net revenue for fiscal year 2017. We believe our aggregate sales to our top five end customers through all channels accounted for more than 40% of our net revenue for each of fiscal years 2018 and 2017. We believe aggregate sales to Apple, Inc., through all channels, accounted for approximately 25% of our net revenue for fiscal year 2018 and more than 20% for fiscal year 2017. We expect to continue to experience significant customer concentration in future periods. The loss of, or significant decrease in demand from, any of our top five end customers could have a material adverse effect on our business, results of operations and financial condition.

From time to time, some of our key customers place large orders or delay orders, causing our quarterly net revenue to fluctuate significantly. This is particularly true in our wireless communications segment as fluctuations may be magnified by the launches of, and seasonal variations in sales of mobile handsets.

In recent years, approximately 50% of our net revenue has come from sales to distributors, OEMs, or contract manufacturers located in China. However, the end customers for either our products or for the end products into which our products are incorporated, are frequently located in countries other than China. As a result, we believe that a substantially smaller percentage of our net revenue is ultimately dependent on sales of either our product or our customers’ product incorporating our product, to end customers located in China.

The following tables set forth net revenue by segment for the periods presented:

Net Revenue by Segment	Fiscal Year Ended November 4, 2018	Fiscal Year Ended October 29, 2017	$ Change	% Change
	(In millions)			
Wired infrastructure	$ 8,674	$ 8,549	$ 125	1 %
Wireless communications	6,490	5,404	1,086	20 %
Enterprise storage	4,673	2,799	1,874	67 %
Industrial & other	1,011	884	127	14 %
Total net revenue	$ 20,848	$ 17,636	$ 3,212	18 %

Net Revenue by Segment	Fiscal Year Ended November 4, 2018	Fiscal Year Ended October 29, 2017
	(As a percentage of net revenue)	
Wired infrastructure	42 %	48 %
Wireless communications	31	31
Enterprise storage	22	16
Industrial & other	5	5
Total net revenue	100 %	100 %

Our total net revenue increased primarily due to the acquisition of Brocade in fiscal year 2018, as well as strong organic year-over-year growth.

Net revenue from our wired infrastructure segment increased slightly primarily due to an increase in demand for our networking application-specific integrated circuit, or ASIC, products, that was largely offset by a decrease in demand for our set top box and optical products. Net revenue from our wireless communications segment increased primarily due to an increase in our wireless content in handsets and a later than typical new handset ramp with a major customer, which resulted in product shipments that typically would have occurred in the fourth quarter of fiscal year 2017 occurring in the first quarter of fiscal year 2018. Net revenue from our enterprise storage segment increased primarily due to contributions from the Brocade Fibre Channel Storage Area Network, or FC SAN, business. Net revenue from our industrial & other segment increased primarily due to an increase in demand for our industrial products.

Gross Margin

Gross margin was $10,733 million for fiscal year 2018 compared to $8,509 million for fiscal year 2017. Gross margin as a percentage of net revenue increased to 52% in fiscal year 2018 from 48% for fiscal year 2017. The fiscal year 2018 increases were primarily due to the addition of Brocade products, as well as a more favorable product mix, partially offset by an increase in amortization of acquisition-related intangible assets. We expect to incur additional amortization of acquisition-related intangible assets in future periods as a result of the CA Merger and any further acquisitions we may make.

Research and Development Expense

Research and development expense increased $476 million, or 14%, in fiscal year 2018. Research and development expense remained relatively flat as a percentage of net revenue at 18% and 19% for fiscal years 2018 and 2017, respectively. The increase in research and development expense dollars for fiscal year 2018 was primarily due to the acquisition of Brocade, higher stock-based compensation expense, and higher variable employee compensation expense due to fiscal year 2018 operating performance. Stock-based compensation expense was higher in fiscal year 2018 primarily due to annual employee equity awards granted at higher grant-date fair values. We expect to incur additional research and development expense in future periods as a result of the CA Merger and any future acquisitions we may make.

Selling, General and Administrative Expense

Selling, general and administrative expense increased $269 million, or 34%, in fiscal year 2018. Selling, general and administrative expense as a percentage of net revenue remained relatively flat at 5% and 4% for fiscal years 2018 and 2017, respectively. The increase in selling, general and administrative expense dollars for fiscal year 2018 was primarily due to the acquisition of Brocade and associated acquisition-related costs, as well as higher stock-based compensation expense. Stock-based compensation expense was higher in fiscal year 2018 primarily due to annual employee equity awards granted at higher grant-date fair values.

Table of Contents

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets recognized in operating expenses decreased $1,223 million, or 69%, in fiscal year 2018. The decrease was primarily due to the full amortization of certain intangible assets acquired in the Broadcom Merger, partially offset by the addition of amortization of intangible assets acquired in the Brocade Merger. We expect to report additional amortization of acquisition-related intangible assets in future periods as a result of the CA Merger and any further acquisitions we may make.

Restructuring, Impairment and Disposal Charges

Restructuring, impairment and disposal charges included in operating expenses increased $58 million, or 36%, in fiscal year 2018. The increase was primarily due to an increase in restructuring activities resulting from the Brocade Merger, partially offset by a decrease in BRCM restructuring activities. We expect to incur additional restructuring charges in future periods as a result of the CA Merger and any further acquisitions we may make.

Litigation Settlements

During fiscal years 2018 and 2017, we incurred $14 million and $122 million of litigation charges, respectively, associated with certain legal settlement agreements.

Segment Operating Results

	Fiscal Year Ended			
Operating Income	**November 4, 2018**	**October 29, 2017**	**$ Change**	**% Change**
		(In millions)		
Wired infrastructure	$ 4,093	$ 3,853	$ 240	6 %
Wireless communications	2,840	2,155	685	32 %
Enterprise storage	2,906	1,527	1,379	90 %
Industrial & other	571	447	124	28 %
Unallocated expenses	(5,275)	(5,599)	324	(6)%
Total operating income	$ 5,135	$ 2,383	$ 2,752	115 %

Operating income from our wired infrastructure segment increased primarily due to an increase in demand for our networking ASIC products, primarily offset by a decrease in demand for our set-top box and optical products. Operating income from our wireless communications segment increased primarily due to an increase in our wireless content in handsets, as well as a later than typical new handset ramp with a major customer, which resulted in higher shipments in fiscal year 2018. Operating income from our enterprise storage segment increased primarily due to contributions from the Brocade FC SAN business products. Operating income from our industrial & other segment increased primarily due to increases in demand for our industrial products.

Unallocated expenses include amortization of acquisition-related intangible assets, stock-based compensation expense, restructuring, impairment and disposal charges, acquisition-related costs, charges for litigation settlements, and other costs that are not used in evaluating the results of, or in allocating resources to, our segments. Unallocated expenses decreased 6% in fiscal year 2018 primarily due to decreases in amortization of acquisition-related intangible assets and charges for litigation settlements, substantially offset by increases in stock-based compensation expense, acquisition-related costs, purchase accounting effect on inventory, and restructuring, impairment and disposal charges.

Non-Operating Income and Expenses

Interest expense. Interest expense was $628 million and $454 million for fiscal years 2018 and 2017, respectively. Interest expense was higher in fiscal year 2018 primarily due to the issuance of our October 2017 Senior Notes, as well as debt commitment fees paid in connection with the Brocade Merger. We expect interest expense to increase in fiscal year 2019 associated with term loan indebtedness we incurred to finance the CA Merger.

Impairment on investment. We recognized $106 million in fiscal year 2018 for an other than temporary impairment of one of our cost method investments.

Loss on extinguishment of debt. Loss on extinguishment of debt was $166 million for fiscal year 2017. We issued senior unsecured notes in January 2017, or January 2017 Senior Notes, to repay all of the term loans outstanding under our guaranteed, collateralized credit agreement dated February 1, 2016. As a result, we wrote-off $166 million of debt issuance costs.

Other income, net. Other income, net includes interest income, gains (losses) on foreign currency remeasurement and
other miscellaneous items. Other income, net was $144 million and $62 million in fiscal years 2018 and 2017, respectively. The increase was primarily due to increases in interest income and gains on foreign currency remeasurement.

Provision for income taxes. Our benefit from income taxes was $8,084 million for fiscal year 2018, compared to a provision for income taxes of $35 million for fiscal year 2017. The benefit from income taxes in fiscal year 2018 was primarily due to the income tax benefits recognized from the enactment of the 2017 Tax Reform Act and the Redomiciliation Transaction. The provision for income taxes in fiscal year 2017 was primarily due to an increase in profit before tax and a discrete expense of $76 million resulting from entity reorganizations, partially offset by the recognition of $273 million of excess tax benefits from stock-based equity awards that vested or were exercised during fiscal year 2017 and, to a lesser extent, the recognition of previously unrecognized tax benefits primarily as a result of audit settlements.

Fiscal Year 2017 Compared to Fiscal Year 2016

	Fiscal Year Ended			
Statements of Operations Data:	**October 29, 2017**	**October 30, 2016**	**October 29, 2017**	**October 30, 2016**
	(In millions)		**(As a percentage of net revenue)**	
Net revenue	$ 17,636	$ 13,240	100 %	100 %
Cost of products sold:				
Cost of products sold	6,593	5,295	38	40
Purchase accounting effect on inventory	4	1,185	—	9
Amortization of acquisition-related intangible assets	2,511	763	14	6
Restructuring charges	19	57	—	—
Total cost of products sold	9,127	7,300	52	55
Gross margin	8,509	5,940	48	45
Research and development	3,292	2,674	19	20
Selling, general and administrative	787	806	4	6
Amortization of acquisition-related intangible assets	1,764	1,873	10	14
Restructuring, impairment and disposal charges	161	996	1	8
Litigation settlements	122	—	1	—
Total operating expenses	6,126	6,349	35	48
Operating income (loss)	$ 2,383	$ (409)	13 %	(3)%

Net Revenue

	Fiscal Year Ended			
Net Revenue by Segment	**October 29, 2017**	**October 30, 2016**	**$ Change**	**% Change**
		(In millions)		
Wired infrastructure	$ 8,549	$ 6,582	$ 1,967	30 %

Wireless communications	5,404	3,724	1,680	45 %
Enterprise storage	2,799	2,291	508	22 %
Industrial & other	884	643	241	37 %
Total net revenue	$ 17,636	$ 13,240	$ 4,396	33 %

Net Revenue by Segment	Fiscal Year Ended October 29, 2017	Fiscal Year Ended October 30, 2016
	(As a percentage of net revenue)	
Wired infrastructure	48 %	50 %
Wireless communications	31	28
Enterprise storage	16	17
Industrial & other	5	5
Total net revenue	100 %	100 %

Our total net revenue increased primarily due to the full year contribution from acquired BRCM products in fiscal year 2017 compared to only three quarters in fiscal year 2016, as well as due to strong organic year-over-year growth.

Net revenue from our wired infrastructure segment increased primarily due to the full year contribution from acquired BRCM products, as well as strong organic year-over-year growth. Net revenue from our wireless communications segment increased primarily due to an increase in our wireless content in handsets, as well as the full year contribution from acquired BRCM products. Net revenue from our enterprise storage segment increased primarily due to strength in demand for our hard disk drive, or HDD, products, as well as increased demand for our custom solid state drive, or SSD, controller, and server storage and connectivity products. The demand for our HDD products was higher in fiscal year 2017 than in fiscal year 2016 due to shortages in the SSD supply chain during fiscal year 2017.

Gross Margin

Gross margin increased by $2,569 million in fiscal year 2017. Gross margin as a percentage of net revenue increased to 48% in fiscal year 2017 from 45% for fiscal year 2016. These increases were primarily attributable to a $1,181 million reduction in acquisition purchase accounting effect on inventory, as well as a more favorable product mix, partially offset by a $1,748 million increase in amortization of acquisition-related intangible assets resulting from the Broadcom Merger. The 33% increase in net revenue was the primary reason for the increase in gross margin dollars.

Research and Development Expense

Research and development expense increased $618 million, or 23%, in fiscal year 2017. Research and development expense remained relatively flat as a percentage of net revenue at 19% and 20% for fiscal years 2017 and 2016, respectively. The increase in research and development expense dollars for fiscal year 2017 was primarily due to a full year of expense resulting from the acquired BRCM businesses and higher stock-based compensation expense, partially offset by benefits from restructuring actions that we initiated following the Broadcom Merger. Stock-based compensation expense was higher in fiscal year 2017 due to equity awards granted to employees from the acquired BRCM businesses, as well as annual employee equity awards granted at higher grant-date fair values.

Selling, General and Administrative Expense

Selling, general and administrative expense decreased $19 million, or 2%, in fiscal year 2017. Selling, general and administrative expense as a percentage of net revenue was 4% and 6% for fiscal years 2017 and 2016, respectively. The decrease in selling, general and administrative expense dollars for fiscal year 2017 was primarily due to a decrease in acquisition-related costs and benefits from restructuring actions that we initiated following the Broadcom Merger, partially offset by higher stock-based compensation expense. Stock-based compensation expense was higher in fiscal year 2017 due to annual employee equity awards granted at higher grant-date fair values.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets recognized in operating expenses decreased $109 million, or 6%, in fiscal year 2017, due to a decrease in amortization of intangible assets acquired in the Broadcom Merger.

Restructuring, Impairment and Disposal Charges

Restructuring, impairment and disposal charges included in operating expenses decreased $835 million, or 84%, in fiscal year 2017, primarily due to a decrease in the impairment of in-process research and development projects. The decrease was also due to lower employee termination costs as the majority of restructuring activities resulting from the Broadcom Merger were undertaken in fiscal year 2016.

Litigation Settlements

During fiscal year 2017, we incurred $122 million of litigation charges associated with certain legal settlement agreements.

Table of Contents

Segment Operating Results

Operating Income (Loss)	Fiscal Year Ended October 29, 2017	Fiscal Year Ended October 30, 2016	$ Change	% Change
	(In millions)			
Wired infrastructure	$ 3,853	$ 2,664	$ 1,189	45 %
Wireless communications	2,155	1,282	873	68 %
Enterprise storage	1,527	995	532	53 %
Industrial & other	447	327	120	37 %
Unallocated expenses	(5,599)	(5,677)	78	(1)%
Total operating income (loss)	$ 2,383	$ (409)	$ 2,792	683 %

Operating income from our wired infrastructure segment increased primarily due to a full year of revenue contributions from acquired BRCM products, as well as strong organic year-over-year growth, partially offset by a full year of research and development expense related to the acquired BRCM businesses. Operating income from our wireless communications segment increased primarily due to an increase in our wireless content in handsets, as well as the full year contribution from acquired BRCM products. These increases were partially offset by a full year of research and development expense related to the acquired BRCM businesses. Operating income from our enterprise storage segment increased primarily due to strength in demand for our HDD products, as well as increased demand for our custom SSD controller and server storage connectivity products. Operating income for the wired infrastructure, wireless communications and enterprise storage segments also benefited from lower operating expenses following our restructuring actions. Operating income from our industrial & other segment increased primarily due to an increase in revenue dollars from our optocoupler products and licensing of intellectual property, or IP, partially offset by an increase in legal expense.

Unallocated expenses decreased 1% in fiscal year 2017 primarily due to significant reductions in the purchase accounting effect on inventory and restructuring, impairment and disposal charges, partially offset by increases in amortization of acquisition-related intangible assets and charges for litigation settlements. Additionally, stock-based compensation was higher in fiscal year 2017 due to equity awards granted to employees from the acquired BRCM businesses, as well as annual employee equity awards granted at higher grant-date fair values.

Non-Operating Income and Expenses

Interest expense. Interest expense was $454 million and $585 million for fiscal years 2017 and 2016, respectively. Interest expense was higher in fiscal year 2016 due primarily to one-time debt-related expenses associated with the financing of the Broadcom Merger.

Loss on extinguishment of debt. During January 2017, we issued senior unsecured notes to refinance all of the term loans outstanding under the 2016 Credit Agreement. We terminated the 2016 Credit Agreement, and the revolving credit facility thereunder, in connection with the issuance of the October 2017 Senior Notes, the proceeds of which were used to finance the Brocade Merger. As a result, we wrote off $166 million of outstanding debt issuance costs, which were included in loss on extinguishment of debt. During fiscal year 2016, we made prepayments on our term loan borrowings under the 2016 Credit Agreement and, as a result, recognized $123 million of losses on extinguishment of debt.

Other income, net. Other income, net was $62 million and $10 million in fiscal years 2017 and 2016, respectively. Other income, net, for fiscal year 2017 was primarily comprised of a gain on disposal of assets and interest income.

Provision for income taxes. Our provisions for income taxes were $35 million and $642 million in fiscal years 2017 and 2016, respectively. The provision for income taxes in fiscal year 2017 was primarily due to an increase in profit before tax and a discrete expense of $76 million resulting from entity reorganizations, partially offset by the recognition of $273 million of excess tax benefits from stock-based equity awards that vested or were exercised during fiscal year 2017 and, to a lesser extent, the recognition of previously unrecognized tax benefits primarily as a result of audit settlements.

The income tax provision for fiscal year 2016 was primarily the result of an increase in tax associated with our undistributed earnings, partially offset by income tax benefits from losses from continuing operations and the recognition of previously unrecognized tax benefits as a result of audit settlements.

Seasonality

Historically, our net revenue has typically been higher in the second half of the fiscal year than in the first half, primarily due to seasonality in our wireless communications segment. This segment has historically experienced seasonality due to launches of new mobile handsets manufactured by our OEM customers. However, from time to time, typical seasonality and industry cyclicality are overshadowed by other factors such as wider macroeconomic effects, the timing of significant product transitions and launches by large OEMs, particularly in the wireless communications segment. We have a diversified business portfolio and we believe that our overall revenue is less susceptible to seasonal variations as a result of this diversification.

Liquidity and Capital Resources

The following section discusses our principal liquidity and capital resources as well as our primary liquidity requirements and uses of cash. Our cash and cash equivalents are maintained in highly liquid investments with remaining maturities of 90 days or less at the time of purchase. We believe our cash equivalents are liquid and accessible.

Our primary sources of liquidity as of November 4, 2018 consisted of: (i) $4,292 million in cash and cash equivalents and (ii) cash we expect to generate from operations. In addition, we may also generate cash from the sale of assets and debt financing from time to time.

Our short-term and long-term liquidity requirements primarily arise from: (i) business acquisitions and investments we may make from time to time, (ii) working capital requirements, (iii) research and development and capital expenditure needs, (iv) stock repurchases, if any, (v) cash dividend payments (if and when declared by the Board of Directors), (vi) interest and principal payments related to outstanding indebtedness and (vii) payment of income taxes, including taxes resulting from intercompany transfers of IP. Beginning April 2018, we settle withholding tax amounts due upon vesting of compensatory equity awards using cash on hand and withhold from the grant recipient that number of shares having a value equivalent to the withholding tax amount, referred to as the Tax Shares. This net settlement method reduces the dilutive effects of such awards as they vest. Previously, the Tax Shares were issued and mandatorily sold into the market, and the cash proceeds were used to pay such withholding tax amounts. This change results in an increased use of our cash, particularly in the second quarter of each fiscal year when the majority of our outstanding equity awards vest. Our ability to fund these requirements will depend, in part, on our future cash flows, which are determined by our future operating performance and, therefore, subject to prevailing global macroeconomic conditions and financial, business and other factors, some of which are beyond our control.

Our capital expenditures for fiscal year 2018 were lower than fiscal year 2017, due primarily to completion of construction at our Irvine and San Jose campuses. We expect capital expenditures to be lower in fiscal year 2019 as compared to fiscal year 2018.

Our debt and liquidity needs increased as a result of completing the CA Merger. We funded $18.8 billion of cash consideration needed for that transaction with debt financing as well as cash on hand of the combined companies.

We believe that our cash and cash equivalents on hand, cash flows from operations, and the revolving credit facility that we established in connection with the debt funding of the CA Merger, will provide sufficient liquidity to operate our business and fund our current and assumed obligations for at least the next 12 months.

From time to time, we engage in discussions with third parties regarding potential acquisitions of, or investments in, businesses, technologies and product lines. Any such transaction, or evaluation of potential transactions, could require significant use of our cash and cash equivalents, or require us to increase our borrowings to fund such transactions. If we do not have sufficient cash to fund our operations or finance growth opportunities, including acquisitions, or unanticipated capital expenditures, our business and financial condition could suffer. In such circumstances, we may seek to obtain new debt or equity financing. However, we cannot assure you that such additional financing will be available on terms acceptable to us or at all. Our ability to service our senior unsecured notes, the term loan A facilities we entered into to fund the CA Merger and any other indebtedness we may incur will depend on our ability to generate cash in the future. We may also elect to sell additional debt or equity securities for reasons other than those specified above.

Working Capital

Working capital decreased to $6,769 million at November 4, 2018 from $13,294 million at October 29, 2017. The decrease was attributable to the following:

- Cash and cash equivalents decreased to $4,292 million at November 4, 2018 from $11,204 million at October 29, 2017 largely due to $7,258 million of common stock repurchases, $4,780 million paid for the Brocade Merger and $2,998 million of dividend and distribution payments, partially offset by $8,880 million in net cash provided by operating activities. See the “Cash Flows” section below for further details.

- Inventory decreased to $1,124 million at November 4, 2018 from $1,447 million at October 29, 2017, due to the timing of a major customer's new handset ramp and our continued focus on inventory management.

- Other current assets decreased to $366 million at November 4, 2018 from $724 million at October 29, 2017, primarily due to lower prepaid expenses, lower prepaid taxes as a result of the 2017 Tax Reform Act, and collection of other receivables.

- Other current liabilities increased to $812 million at November 4, 2018 from $681 million at October 29, 2017, primarily due to higher deferred revenue associated with the Brocade Merger.

These decreases in working capital were offset in part by the following:

- Accounts receivable increased to $3,325 million at November 4, 2018 from $2,448 million at October 29, 2017, primarily due to higher volume and revenue linearity.

- Accounts payable decreased to $811 million at November 4, 2018 from $1,105 million at October 29, 2017, primarily due to timing of vendor payments.

- Current portion of long-term debt decreased $117 million due to repayment of certain unsecured senior notes assumed in the Broadcom Merger.

Working capital increased to $13,294 million at October 29, 2017 from $4,047 million at October 30, 2016. The increase was attributable to the following:

- Cash and cash equivalents increased to $11,204 million at October 29, 2017 from $3,097 million at October 30, 2016, largely due to $6,551 million in net cash provided by operating activities as well as $3,980 million of net proceeds from issuance of the October 2017 Senior Notes and the January 2017 Senior Notes, collectively the 2017 Senior Notes, partially offset by $1,745 million of dividend and distribution payments and $674 million net cash used in investing activities. See the "Cash Flows" section below for further details.

- Accounts receivable increased to $2,448 million at October 29, 2017 from $2,181 million at October 30, 2016 primarily due to higher volume and revenue linearity.

- Other current assets increased to $724 million at October 29, 2017 from $447 million at October 30, 2016, primarily due to an increase in prepaid taxes.

- Current portion of long-term debt decreased to $117 million at October 29, 2017 from $454 million at October 30, 2016, due to repayment of the outstanding term loans under the 2016 credit agreement which was subsequently terminated in fiscal year 2017.

- Other current liabilities decreased to $681 million at October 29, 2017 from $846 million at October 30, 2016, primarily due to utilization of restructuring reserves and reduction of rebate arrangements with our customers, offset by interest accrual for our long-term debt.

- Accounts payable decreased to $1,105 million at October 29, 2017 from $1,261 million at October 30, 2016, primarily due to timing of vendor payments.

Capital Returns

In April 2018, our Board of Directors authorized the repurchase of up to $12 billion of our common stock from time to time on or prior to November 3, 2019, the end of our fiscal year 2019. During fiscal year 2018, we repurchased and retired approximately 32 million shares of our common stock at a weighted average price of $227.60 under this stock repurchase program. As of November 4, 2018, $4,742 million of the current authorization remained available under our stock repurchase program. On December 5, 2018, subsequent to the end of our fiscal year 2018, our Board of Directors authorized the repurchase of up to an additional $6 billion of our common stock on or prior to the end of our fiscal year 2019.

Repurchases under our stock repurchase program may be effected through a variety of methods, including open market or privately negotiated purchases. The timing and number of shares of common stock repurchased will depend on a variety of factors, including price, general business and market conditions and alternative investment opportunities. We are not obligated to repurchase any specific number of shares of common stock, and we may suspend or discontinue our stock repurchase program at any time.

	Fiscal Year Ended		
	November 4, 2018	October 29, 2017	October 30, 2016
	(In millions, except per share data)		
Cash dividends and distributions paid per share/unit	$ 7.00	$ 4.08	$ 1.94
Cash dividends and distributions paid	$ 2,998	$ 1,745	$ 750
Stock repurchases	$ 7,258	$ —	$ —

Cash Flows

	Fiscal Year Ended		
	November 4, 2018	October 29, 2017	October 30, 2016
	(In millions)		
Net cash provided by operating activities	$ 8,880	$ 6,551	$ 3,411
Net cash used in investing activities	(4,674)	(674)	(9,840)
Net cash provided by (used in) financing activities	(11,118)	2,230	7,704
Net change in cash and cash equivalents	$ (6,912)	$ 8,107	$ 1,275

Operating Activities

Cash provided by operating activities consisted of net income (loss) adjusted for certain non-cash items and changes in assets and liabilities. The $2,329 million increase in cash provided by operations during fiscal year 2018 compared to fiscal year 2017 was primarily due to the impact of net income, partially offset by adjustments to net income for non-cash items. Net income for fiscal year 2018 reflected an income tax benefit of $8,084 million principally resulting from the enactment of the 2017 Tax Reform Act and the impact from the Redomiciliation Transaction and related internal reorganizations. This benefit was primarily non-cash, resulting in a significant adjustment to net income, and was included in the deferred taxes and other non-cash taxes line in the consolidated statement of cash flows for fiscal year 2018. Other non-cash adjustments to net income for fiscal year 2018 as compared to fiscal year 2017 primarily included decreases in amortization of intangible assets and the non-cash portion of the debt extinguishment loss, partially offset by increases in stock-based compensation and impairment of investment.

The $3,140 million increase in cash provided by operations during fiscal year 2017 compared to fiscal year 2016 was due to the impact of net income and adjustments to net income for non-cash items, partially offset by changes in assets and liabilities. The non-cash adjustments to net income for fiscal year 2017 as compared to fiscal year 2016 primarily included increases in amortization of intangible assets and stock-based compensation, partially offset by decreases in non-cash restructuring, impairment and disposal charges and deferred taxes and other non-cash taxes.

Investing Activities

Cash used in investing activities primarily consisted of cash used for acquisitions, capital expenditures and investments, partially offset by proceeds from sales of businesses and assets. The $4,000 million increase in cash used in investing activities for fiscal year 2018 compared to fiscal year 2017 was primarily related to $4,780 million paid for the Brocade Merger in fiscal year 2018, partially offset by proceeds from sales of businesses as well as lower capital expenditures.

The $9,166 million decrease in cash used in investing activities for fiscal year 2017 compared to fiscal year 2016 was primarily due to $10,055 million paid primarily for the Broadcom Merger in fiscal year 2016 and cash receipts of $441 million from the sale of our Irvine campus in fiscal year 2017, partially offset by a decrease in proceeds from sales of businesses and an increase in capital expenditures and investments.

Financing Activities

Cash provided by (used in) financing activities primarily consisted of net proceeds and payments related to our long-term debt, dividend and distribution payments, stock repurchases, and the issuances of common stock pursuant to our employee equity incentive plans. The $13,348 million increase in cash used in financing activities for fiscal year 2018 compared to fiscal year 2017 was primarily due to $7,258 million of stock repurchases, an increase in dividend and distribution payments and the repayment of debt.

The $5,474 million decrease in cash provided by financing activities for fiscal year 2017 compared to fiscal year 2016 was primarily due to a decrease in net proceeds and payments related to our long-term debt and an increase in dividend and distribution payments.

Indebtedness

See Note 8. "Borrowings" included in Part II, Item 8. of this Annual Report on Form 10-K.

Contractual Commitments

		Payments Due by Period			
	Total	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
			(In millions)		
Debt principal and interest	$ 20,941	$ 566	$ 4,563	$ 5,306	$ 10,506
Purchase commitments	852	776	75	1	—
Other contractual commitments	175	105	68	2	—
Operating lease obligations	650	75	113	75	387
Total	$ 22,618	$ 1,522	$ 4,819	$ 5,384	$ 10,893

Debt Principal and Interest. Represents principal and interest on borrowings under the 2017 Senior Notes and outstanding senior unsecured notes that we assumed as a result of the Broadcom Merger and Brocade Merger.

Purchase Commitments. Represents unconditional purchase obligations that include agreements to purchase goods or services, primarily inventory, that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable price provisions, and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty. Cancellation for outstanding purchase orders for capital expenditures in connection with the internal fabrication facility expansion and construction of our new campuses is generally allowed but requires payment of all costs incurred through the date of cancellation and, therefore, cancelable purchase orders for these capital expenditures are included in the table above.

Other Contractual Commitments. Represents amounts payable pursuant to agreements related to information technology, human resources, financial infrastructure outsourcing services and other service agreements.

Operating Lease Obligations. Represents real property and equipment leased from third parties under non-cancelable operating leases.

Due to the inherent uncertainty with respect to the timing of future cash outflows associated with our unrecognized tax benefits at November 4, 2018, we are unable to reliably estimate the timing of cash settlement with the respective taxing authority. Therefore, $3,088 million of unrecognized tax benefits and accrued interest classified within other long-term liabilities on our consolidated balance sheet as of November 4, 2018 have been excluded from the contractual obligations table above.

Off-Balance Sheet Arrangements

We had no material off-balance sheet arrangements at November 4, 2018 as defined in Item 303(a)(4)(ii) of Regulation S-K under the Exchange Act.

Indemnifications

See Note 13. "Commitments and Contingencies" in Part II, Item 8 of this Form 10-K.

Accounting Changes and Recent Accounting Standards

For a description of accounting changes and recent accounting standards, including the expected dates of adoption and estimated effects, if any, in our consolidated financial statements, see Note 2. "Summary of Significant Accounting Policies" included in Part II, Item 8. of this Annual Report on Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign Currency Derivative Instruments

We use foreign exchange forward contracts to hedge a portion of our exposures to changes in currency exchange rates, which result from our global operating and financing activities. Gains and losses from foreign currency transactions, as well as derivative instruments, were not significant for any period presented in the consolidated financial statements included in this Form 10-K. As of November 4, 2018, we did not have any outstanding foreign exchange forward contracts.

European Debt Exposures

We actively monitor our exposure to the European financial markets, including the impact of sovereign debt issues. We also seek to mitigate our risk by investing in fixed deposits with various financial institutions and we limit the amount we hold with any one institution. We do not have any direct investments in the sovereign debt of European countries. From time to time, we may have deposits with major European financial institutions. We also seek to mitigate collection risks from our customers by performing regular credit evaluations of our customers' financial condition and require collateral, such as letters of credit and bank guarantees, in certain circumstances. As of November 4, 2018, we do not believe that we have any material direct or indirect exposure to the European financial markets.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

BROADCOM INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Broadcom Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Broadcom Inc. and its subsidiaries (the "Company") as of November 4, 2018 and October 29, 2017, and the related consolidated statements of operations, comprehensive income (loss), cash flows and equity for each of the three years in the period ended November 4, 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 November 4, 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 November 4, 2018 and October 29, 2017, and the results of its operations and its cash flows for each of the three years in the period ended November 4, 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 November 4, 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 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.

/s/ PricewaterhouseCoopers LLP

San Jose, California
December 21, 2018

We have served as the Company’s auditor since 2006

BROADCOM INC.

CONSOLIDATED BALANCE SHEETS

	November 4, 2018	October 29, 2017
	(In millions, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 4,292	$ 11,204
Trade accounts receivable, net	3,325	2,448
Inventory	1,124	1,447
Other current assets	366	724
Total current assets	9,107	15,823
Long-term assets:		
Property, plant and equipment, net	2,635	2,599
Goodwill	26,913	24,706
Intangible assets, net	10,762	10,832
Other long-term assets	707	458
Total assets	$ 50,124	$ 54,418
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 811	$ 1,105
Employee compensation and benefits	715	626
Current portion of long-term debt	—	117
Other current liabilities	812	681
Total current liabilities	2,338	2,529
Long-term liabilities:		
Long-term debt	17,493	17,431
Other long-term liabilities	3,636	11,272
Total liabilities	23,467	31,232
Commitments and contingencies (Note 13)		
Equity:		
Broadcom Inc. stockholders' equity:		
Preferred stock, $0.001 par value; 100 shares authorized; none and 22 shares issued and outstanding as of November 4, 2018 and October 29, 2017, respectively	—	—
Common stock and additional paid-in capital, $0.001 par value; 2,900 shares authorized; 408 and 409 shares issued and outstanding as of November 4, 2018 and October 29, 2017, respectively	23,285	20,505
Retained earnings (accumulated deficit)	3,487	(129)
Accumulated other comprehensive loss	(115)	(91)
Total Broadcom Inc. stockholders' equity	26,657	20,285
Noncontrolling interest	—	2,901
Total equity	26,657	23,186
Total liabilities and equity	$ 50,124	$ 54,418

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

	Fiscal Year Ended		
	November 4, 2018	October 29, 2017	October 30, 2016
	(In millions, except per share data)		
Net revenue	$ 20,848	$ 17,636	$ 13,240
Cost of products sold:			
Cost of products sold	7,021	6,593	5,295
Purchase accounting effect on inventory	70	4	1,185
Amortization of acquisition-related intangible assets	3,004	2,511	763
Restructuring charges	20	19	57
Total cost of products sold	10,115	9,127	7,300
Gross margin	10,733	8,509	5,940
Research and development	3,768	3,292	2,674
Selling, general and administrative	1,056	787	806
Amortization of acquisition-related intangible assets	541	1,764	1,873
Restructuring, impairment and disposal charges	219	161	996
Litigation settlements	14	122	—
Total operating expenses	5,598	6,126	6,349
Operating income (loss)	5,135	2,383	(409)
Interest expense	(628)	(454)	(585)
Impairment on investment	(106)	—	—
Loss on extinguishment of debt	—	(166)	(123)
Other income, net	144	62	10
Income (loss) from continuing operations before income taxes	4,545	1,825	(1,107)
Provision for (benefit from) income taxes	(8,084)	35	642
Income (loss) from continuing operations	12,629	1,790	(1,749)
Loss from discontinued operations, net of income taxes	(19)	(6)	(112)
Net income (loss)	12,610	1,784	(1,861)
Net income (loss) attributable to noncontrolling interest	351	92	(122)
Net income (loss) attributable to common stock	$ 12,259	$ 1,692	$ (1,739)
Basic income (loss) per share:			
Income (loss) per share from continuing operations	$ 29.37	$ 4.19	$ (4.46)
Loss per share from discontinued operations	(0.04)	(0.01)	(0.29)
Net income (loss) per share	$ 29.33	$ 4.18	$ (4.75)
Diluted income (loss) per share:			
Income (loss) per share from continuing operations	$ 28.48	$ 4.03	$ (4.57)
Loss per share from discontinued operations	(0.04)	(0.01)	(0.29)
Net income (loss) per share	$ 28.44	$ 4.02	$ (4.86)
Weighted-average shares:			
Basic	418	405	366
Diluted	431	421	383

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Fiscal Year Ended		
	November 4, 2018	October 29, 2017	October 30, 2016
		(In millions)	
Net income (loss)	$ 12,610	$ 1,784	$ (1,861)
Other comprehensive income (loss), net of tax:			
Change in actuarial gain (loss) and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	(8)	43	(61)
Other comprehensive income (loss)	(8)	43	(61)
Comprehensive income (loss)	12,602	1,827	(1,922)
Comprehensive income (loss) attributable to noncontrolling interest	351	92	(122)
Comprehensive income (loss) attributable to common stock	$ 12,251	$ 1,735	$ (1,800)

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Fiscal Year Ended		
	November 4, 2018	October 29, 2017	October 30, 2016
	(In millions)		
Cash flows from operating activities:			
Net income (loss)	$ 12,610	$ 1,784	$ (1,861)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Amortization of intangible assets	3,566	4,286	2,640
Depreciation	515	451	402
Stock-based compensation	1,227	921	679
Excess tax benefits from stock-based compensation	—	—	(89)
Deferred taxes and other non-cash taxes	(8,270)	(173)	365
Impairment on investment	106	—	—
Non-cash portion of debt extinguishment loss	—	166	100
Non-cash restructuring, impairment and disposal charges	21	71	662
Amortization of debt issuance costs and accretion of debt discount	24	24	36
Other	37	7	(6)
Changes in assets and liabilities, net of acquisitions and disposals:			
Trade accounts receivable, net	(652)	(267)	(491)
Inventory	417	(39)	996
Accounts payable	(325)	(97)	33
Employee compensation and benefits	6	109	163
Contributions to defined benefit pension plans	(130)	(361)	(33)
Other current assets and current liabilities	369	(490)	(98)
Other long-term assets and long-term liabilities	(641)	159	(87)
Net cash provided by operating activities	8,880	6,551	3,411
Cash flows from investing activities:			
Acquisitions of businesses, net of cash acquired	(4,800)	(40)	(10,055)
Proceeds from sales of businesses	773	10	898
Purchases of property, plant and equipment	(635)	(1,069)	(723)
Proceeds from disposals of property, plant and equipment	239	441	5
Purchases of investments	(249)	(207)	(58)
Proceeds from sales and maturities of investments	54	200	104
Other	(56)	(9)	(11)
Net cash used in investing activities	(4,674)	(674)	(9,840)
Cash flows from financing activities:			
Proceeds from issuance of long-term debt	—	17,426	19,510
Repayment of debt	(973)	(13,668)	(11,317)
Payment of debt issuance costs	—	(24)	(123)
Dividend and distribution payments	(2,998)	(1,745)	(750)
Repurchase of common stock	(7,258)	—	—
Issuance of common stock, net of shares withheld for employee taxes	156	257	295
Excess tax benefits from stock-based compensation	—	—	89
Payment of capital lease obligations	(21)	(16)	—
Other	(24)	—	—

Net cash provided by (used in) financing activities	(11,118)	2,230	7,704
Net change in cash and cash equivalents	(6,912)	8,107	1,275
Cash and cash equivalents at beginning of period	11,204	3,097	1,822
Cash and cash equivalents at end of period	$ 4,292	$ 11,204	$ 3,097
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 547	$ 310	$ 448
Cash paid for income taxes	$ 512	$ 349	$ 242

The accompanying notes are an integral part of these consolidated financial statements.

[Table of Contents](#)

BROADCOM INC.

CONSOLIDATED STATEMENTS OF EQUITY

	Preferred Stock		Common Stock and Additional Paid-in Capital		Retained Earnings/ (Accumulated Deficit)	Accumulated Other Comprehensive Loss	Total Broadcom Inc. Stockholders' Equity	Noncontrolling Interest	Total Equity
	Shares	Amount	Shares	Amount					
	(In millions)								
Balance as of November 1, 2015	—	$ —	276	$ 2,547	$ 2,240	$ (73)	$ 4,714	$ —	$ 4,714
Net loss	—	—	—	—	(1,739)	—	(1,739)	(122)	(1,861)
Other comprehensive loss	—	—	—	—	—	(61)	(61)	—	(61)
Issuance of common stock upon the acquisition of Broadcom Corporation	—	—	112	15,438	—	—	15,438	—	15,438
Issuance by Broadcom Cayman L.P. of exchangeable limited partnership units upon the acquisition of Broadcom Corporation	—	—	—	—	—	—	—	3,140	3,140
Issuance of preferred stock	23	—	—	—	—	—	—	—	—
Fair value of partially vested equity awards assumed in connection with the acquisition of Broadcom Corporation	—	—	—	182	—	—	182	—	182
Cash dividends declared and paid to common stockholders	—	—	—	—	(716)	—	(716)	—	(716)
Cash distribution declared and paid by Broadcom Cayman L.P. on exchangeable limited partnership units	—	—	—	—	—	—	—	(34)	(34)
	—	—	10	295	—	—	295	—	295

Common stock issued									
Stock-based compensation	—	—	—	690	—	—	690	—	690
Excess tax benefits from stock-based compensation	—	—	—	89	—	—	89	—	89
Balance as of October 30, 2016	23	—	398	19,241	(215)	(134)	18,892	2,984	21,876
Net income	—	—	—	—	1,692	—	1,692	92	1,784
Other comprehensive income	—	—	—	—	—	43	43	—	43
Cumulative effect of accounting change	—	—	—	—	47	—	47	3	50
Cash dividends declared and paid to common stockholders	—	—	—	—	(1,653)	—	(1,653)	—	(1,653)
Cash distribution declared and paid by Broadcom Cayman L.P. on exchangeable limited partnership units	—	—	—	—	—	—	—	(92)	(92)
Exchange of exchangeable limited partnership units for common stock and cancellation of preferred stock	(1)	—	1	86	—	—	86	(86)	—
Common stock issued	—	—	10	257	—	—	257	—	257
Stock-based compensation	—	—	—	921	—	—	921	—	921
Balance as of October 29, 2017	22	—	409	20,505	(129)	(91)	20,285	2,901	23,186
Net income	—	—	—	—	12,259	—	12,259	351	12,610
Other comprehensive loss	—	—	—	—	—	(8)	(8)	—	(8)
Cumulative effect of accounting change	—	—	—	—	(237)	(16)	(253)	(13)	(266)
Fair value of partially vested equity awards assumed in connection with the acquisition of Brocade Communications Systems, Inc.	—	—	—	8	—	—	8	—	8
	—	—	—	—	(2,921)	—	(2,921)	—	(2,921)

Cash dividends declared and paid to common stockholders									
Cash distribution declared and paid by Broadcom Cayman L.P. on exchangeable limited partnership units	—	—	—	—	—	—	—	(77)	(77)
Exchange of exchangeable limited partnership units for common stock and redemption of preferred stock due to the Redomiciliation Transaction	(22)	—	22	3,162	—	—	3,162	(3,162)	—
Common stock issued, net of shares withheld for employee taxes	—	—	9	156	—	—	156	—	156
Stock-based compensation	—	—	—	1,227	—	—	1,227	—	1,227
Repurchases of common stock	—	—	(32)	(1,773)	(5,485)	—	(7,258)	—	(7,258)
Balance as of November 4, 2018	—	$ —	408	$ 23,285	$ 3,487	$ (115)	$ 26,657	$ —	$ 26,657

The accompanying notes are an integral part of these consolidated financial statements.

BROADCOM INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Overview and Basis of Presentation

Overview

Broadcom Inc., or Broadcom, is the successor to Broadcom Limited, a company organized under the laws of the Republic of Singapore, or Broadcom-Singapore. As part of the plan to cause the publicly traded parent company of Broadcom to be a Delaware corporation, or the Redomiciliation Transaction, after the close of market trading on April 4, 2018, Broadcom and Broadcom-Singapore completed a statutory scheme of arrangement under Singapore law pursuant to which all Broadcom-Singapore outstanding ordinary shares were exchanged on a one-for-one basis for newly issued shares of Broadcom common stock and Broadcom-Singapore became an indirect wholly-owned subsidiary of Broadcom.

In conjunction with the Redomiciliation Transaction, all outstanding exchangeable limited partnership units, or LP Units, of Broadcom Cayman L.P., or the Partnership, a subsidiary of Broadcom-Singapore, were mandatorily exchanged, or the Mandatory Exchange, on a one-for-one basis for newly issued shares of Broadcom common stock. As a result, all limited partners of the Partnership became common stockholders of Broadcom. In addition, all related outstanding special preference shares of Broadcom-Singapore were automatically redeemed upon the Mandatory Exchange. Consequently, the limited partners no longer hold a noncontrolling interest in the Partnership and we subsequently deregistered the Partnership.

The scheme of arrangement was accounted for as an exchange of equity interests among entities under common control. All assets and liabilities of Broadcom-Singapore were assumed by Broadcom, resulting in the retention of the historical basis of accounting as if they had always been combined for accounting and financial reporting purposes.

The financial statements relate to:

- Avago Technologies Limited, or Avago, predecessor to Broadcom-Singapore, for periods prior to February 1, 2016;
- Broadcom-Singapore for the period from February 1, 2016 to April 4, 2018, the effective date of the Redomiciliation Transaction; and
- Broadcom for periods after April 4, 2018.

Unless stated otherwise or the context otherwise requires, references to "Broadcom", "we", "our" and "us" mean Broadcom Inc. and its consolidated subsidiaries from the effective date of the Redomiciliation Transaction and, prior to that time, our predecessors Broadcom-Singapore or Avago for the periods specified above.

We are a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. We develop semiconductor devices with a focus on complex digital and mixed signal complementary metal oxide semiconductor based devices and analog III-V based products. We have a history of innovation and offer thousands of products that are used in end products such as enterprise and data center networking, home connectivity, set-top boxes, broadband access, telecommunication equipment, smartphones and base stations, data center servers and storage systems, factory automation, power generation and alternative energy systems, and electronic displays. Through our fiscal year ended November 4, 2018, or fiscal year 2018, we had four reportable segments: wired infrastructure, wireless communications, enterprise storage and industrial & other, which align with our principal target markets.

Basis of Presentation

We operate on a 52- or 53-week fiscal year ending on the Sunday closest to October 31 in a 52-week year and the first Sunday in November in a 53-week year. Our fiscal year 2018 was a 53-week fiscal year, with our first fiscal quarter containing 14 weeks. The first quarter of our fiscal year 2018 ended on February 4, 2018, the second quarter ended on May 6, 2018 and the third quarter ended on August 5, 2018. Our fiscal years ended October 29, 2017, or fiscal year 2017, and October 30, 2016, or fiscal year 2016, were 52-week fiscal years.

On November 17, 2017, we acquired Brocade Communications Systems, Inc., or Brocade. On February 1, 2016, we acquired Broadcom Corporation, or BRCM. The accompanying consolidated financial statements include the results of operations of Brocade and BRCM commencing as of their respective acquisition dates.

The accompanying consolidated financial statements include the accounts of Broadcom and its subsidiaries and have been prepared in accordance with generally accepted principles in the United States, or GAAP. All intercompany balances and transactions have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Foreign currency remeasurement. We operate in a U.S. dollar functional currency environment. As such, foreign currency assets and liabilities are remeasured into U.S. dollars at current exchange rates except for non-monetary items such as inventory and property, plant and equipment, which are remeasured at historical exchange rates. The effects of foreign currency remeasurement were not material for any period presented.

Use of estimates. The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates, and such differences could affect the results of operations reported in future periods.

Cash and cash equivalents. We consider all highly liquid investment securities with original or remaining maturities of three months or less at the date of purchase to be cash equivalents. We determine the appropriate classification of our cash and cash equivalents at the time of purchase.

Trade accounts receivable, net. Trade accounts receivable are recognized at the invoiced amount and do not bear interest. Accounts receivable are reduced by an allowance for doubtful accounts, which is our best estimate of the amount of probable credit losses in our existing accounts receivable. We determine the allowance based on customer-specific experience and the aging of such receivables, among other factors. Allowances for doubtful accounts were not material as of November 4, 2018 or October 29, 2017. Accounts receivable are also recognized net of sales returns and distributor credit allowances. These amounts are recognized when it is both probable and estimable that discounts will be granted or products will be returned. Allowances for sales returns and distributor credit allowances at November 4, 2018 and October 29, 2017 were $161 million and $208 million, respectively.

Concentrations of credit risk and significant customers. Our cash, cash equivalents and accounts receivable are potentially subject to concentration of credit risk. Cash and cash equivalents may be redeemable upon demand and are maintained with several financial institutions that management believes are of high credit quality and therefore bear minimal credit risk. We seek to mitigate our credit risks by spreading such risks across multiple counterparties and monitoring the risk profile of these counterparties. Our accounts receivable are derived from revenue earned from customers located both within and outside the U.S. We mitigate collection risks from our customers by performing regular credit evaluations of our customers' financial conditions, and require collateral, such as letters of credit and bank guarantees, in certain circumstances.

Concentration of other risks. The semiconductor industry is characterized by rapid technological change, competitive pricing pressures and cyclical market patterns. Our financial results are affected by a wide variety of factors, including general economic conditions worldwide, economic conditions specific to the semiconductor industry, timely implementation of new manufacturing technologies, ability to safeguard patents and other intellectual property in a rapidly evolving market and reliance on assembly and test subcontractors, third-party wafer fabricators and independent distributors. In addition, the semiconductor market has historically been cyclical and subject to significant economic downturns at various times. We are exposed to the risk of obsolescence of our inventory depending on the mix of future business.

Inventory. We value our inventory at the lower of actual cost or net realizable value of the inventory, with cost being determined under the first-in, first-out method. We record a provision for excess and obsolete inventory based primarily on our forecast of product demand and production requirements. The excess and obsolete balance determined by this analysis becomes the basis for our excess and obsolete inventory charge and the written-down value of the inventory becomes its new cost basis.

Retirement benefits. Post-retirement benefit plan assets and liabilities are estimates of benefits that we expect to pay to eligible retirees. We consider various factors in determining the value of our post-retirement net assets, including the number of employees that we expect to receive benefits and other actuarial assumptions.

For defined benefit pension plans, we consider various factors in determining our respective pension liabilities and net periodic benefit costs, including the number of employees that we expect to receive benefits, their salary levels and years of service, the expected return on plan assets, the discount rate, the timing of the payment of benefits, and other actuarial assumptions. If the actual results and events of the retirement benefit plans differ from our current assumptions, the benefit obligations may be over- or under-valued.

The key benefit plan assumptions are the discount rate and the expected rate of return on plan assets. The U.S. discount rates are based on the results of matching expected plan benefit payments with cash flows from a hypothetical yield curve constructed with high-quality corporate bond yields. The U. S. expected rate of return on plan assets is set equal to the discount rate due to the implementation of our fully-matched, liability-driven investment strategy.

For the non-U.S. plans, we set assumptions specific to each country.

Derivative instruments. We are subject to foreign currency risks for transactions denominated in foreign currencies, primarily the Singapore Dollar, Israeli Shekel, Euro, Japanese Yen and Indian Rupee. Therefore, we enter into foreign exchange forward contracts to manage financial exposures resulting from the changes in the exchange rates of these foreign currencies. These contracts are designated at inception as hedges of the related foreign currency exposures, which include committed and forecasted revenue and expense transactions that are denominated in currencies other than the functional currency of the subsidiary which has the exposure. We exclude time value from the measurement of effectiveness. To achieve hedge accounting, contracts must reduce the foreign currency exchange rate risk otherwise inherent in the amount and duration of the hedged exposures and comply with established risk management policies; our hedging contracts generally mature within three months. We do not use derivative financial instruments for speculative or trading purposes.

We designate our forward contracts as either cash flow or fair value hedges. All derivatives are recognized on the consolidated balance sheets at their fair values based on Level 2 inputs as defined in the fair value hierarchy. The accounting for gains and losses resulting from changes in fair value depends on the use of the derivative and whether it is designated and qualifies for hedge accounting. For derivative instruments that are designated and qualify as fair value hedges, changes in value of the instruments are recognized in income (loss) in the current period. Such hedges are recognized in net income (loss) and are offset by the changes in fair value of the underlying assets or liabilities being hedged. For derivative instruments that are designated and qualify as cash flow hedges, changes in the value of the effective portion of the derivative instrument are recognized in accumulated other comprehensive loss, a component of stockholders' equity. These amounts are then reclassified and recognized in net income (loss) when either the forecasted transaction affects earnings or it becomes probable the forecasted transaction will not occur. Changes in the fair value of the ineffective portion of derivative instruments are recognized in net income (loss) in the current period, which have not been material to date. Changes in the value of derivative instruments not designated as hedges are recognized in other income, net, in our consolidated statements of operations. As of November 4, 2018 and October 29, 2017, we did not have any outstanding foreign exchange forward contracts.

Property, plant and equipment. Property, plant and equipment are stated at cost less accumulated depreciation and amortization. Additions, improvements and major renewals are capitalized, and maintenance, repairs and minor renewals are expensed as incurred. Assets are held in construction in progress until placed in service, upon which date, we begin to depreciate these assets. When assets are retired or disposed of, the assets and related accumulated depreciation and amortization are removed from our property, plant and equipment balances and the resulting gain or loss is reflected in the consolidated statements of operations. Buildings and leasehold improvements are generally depreciated over 15 to 40 years, or over the lease period, whichever is shorter, and machinery and equipment are generally depreciated over three to ten years. We use the straight-line method of depreciation for all property, plant and equipment.

Fair value measurement. Fair value is defined as the price that would be received upon sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. A three level hierarchy is applied to prioritize the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

The three levels of the fair value hierarchy under the guidance for fair value measurements are described below:

Level 1 — Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Our Level 1 assets include cash equivalents, banker's acceptances, trading securities investments and investment funds. We measure trading securities investments and investment funds at quoted market prices as they are traded in an active market with sufficient volume and frequency of transactions.

Level 2 — Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. If the asset or liability has a specified contractual term, a Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 — Level 3 inputs are unobservable inputs for the asset or liability in which there is little, if any, market activity for the asset or liability at the measurement date. Level 3 assets and liabilities include cost method investments, goodwill, intangible assets, and property, plant and equipment, which are measured at fair value using a discounted cash flow approach when they are impaired. Quantitative information for Level 3 assets and liabilities reviewed at each reporting period includes indicators of significant deterioration in the earnings performance, credit rating, asset quality, business prospects of the investee, and financial indicators of the investee's ability to continue as a going concern.

Business combinations. We account for business combinations under the acquisition method of accounting, which requires us to recognize separately from goodwill the assets acquired and the liabilities assumed at their acquisition date fair values. While we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recognized in our consolidated statements of operations. Accounting for business combinations requires our management to make significant estimates and assumptions, especially at the acquisition date including our estimates for intangible assets, contractual obligations assumed, restructuring liabilities, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made in the past have been reasonable and appropriate, they are based, in part, on historical experience and information obtained from the management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain acquired intangible assets under the income approach include growth in future expected cash flows from product sales, customer contracts and acquired technologies, technology obsolescence rates, expected costs to develop in-process research and development, or IPR&D, into commercially viable products, estimated cash flows from the projects when completed and discount rates. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates or actual results.

Goodwill. Goodwill represents the excess of purchase price and related costs over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Goodwill is not amortized but is reviewed annually (or more frequently if impairment indicators arise) for impairment. To review for impairment we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions, including exiting an activity in conjunction with restructuring of operations; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of any of our reporting units is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of any of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit’s net book value. If the fair value of the reporting unit is greater than its net book value, there is no impairment. Otherwise, we calculate the implied fair value of goodwill by deducting the fair value of all tangible and intangible assets, excluding goodwill, of the reporting unit from the fair value of the reporting unit. The implied fair value of goodwill is compared to the carrying value of goodwill. If the implied fair value of goodwill is less than the carrying value of goodwill, an impairment loss is recognized equal to the difference. Determining the fair value of a reporting unit involves the use of significant estimates and assumptions.

Long-lived assets. Purchased finite-lived intangible assets are carried at cost less accumulated amortization. Amortization is recognized over the periods during which the intangible assets are expected to contribute to our cash flows. Purchased IPR&D projects are capitalized at fair value as an indefinite lived intangible asset and assessed for impairment thereafter. Upon completion of each underlying project, IPR&D assets are reclassified as an amortizable purchased intangible asset and amortized over their estimated useful lives. If an IPR&D project is abandoned, we recognize the carrying value of the related intangible asset in our consolidated statements of operations in the period it is abandoned. On a quarterly basis, we monitor factors and changes in circumstances that could indicate carrying amounts of long-lived assets, including purchased intangible assets and property, plant and equipment, may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, and (iii) significant negative industry or economic trends. An impairment loss must be measured if the sum of the expected future cash flows (undiscounted and before interest) from the use and eventual disposition of the asset (or asset group) is less than the net book value of the asset (or asset group). The amount of the impairment loss will generally be measured as the difference between the net book value of the asset (or asset group) and the estimated fair value.

Warranty. We accrue for the estimated costs of product warranties at the time revenue is recognized. Product warranty costs are estimated based upon our historical experience and specific identification of the products requirements, which may fluctuate based on product mix. Additionally, we accrue for warranty costs associated with occasional or unanticipated product quality issues if a loss is probable and can be reasonably estimated.

Revenue recognition. We recognize revenue related to sales of our products, net of trade discounts and allowances, provided that (i) persuasive evidence of an arrangement exists, (ii) delivery has occurred and title and risk of loss have transferred, (iii) the price is fixed or determinable and (iv) collectibility is reasonably assured. Delivery is considered to have occurred when title and risk of loss have transferred to the customer. We consider the price to be determinable when the price is not subject to refund or adjustments or when any such adjustments can be estimated. We evaluate the creditworthiness of our customers to determine that appropriate credit limits are established prior to the acceptance of an order. Revenue, including sales to resellers and distributors, is reduced for estimated returns and distributor allowances.

We recognize revenue from sales of our products to distributors upon delivery of product to the distributors. An allowance for distributor credits covering price adjustments is made based on our estimate of historical experience rates as well as considering economic conditions and contractual terms. To date, actual distributor claims activity has been materially consistent with the provisions we have made based on our historical estimates. We also record reductions of revenue for rebates in the same period that the related revenue is recorded. We accrue 100% of potential rebates at the time of sale. We reverse the accrual of unclaimed rebate amounts as specific rebate programs contractually end and when we believe unclaimed rebates are no longer subject to payment and will not be paid. Thus, the reversal of unclaimed rebates may have a positive impact on our net revenue and results of operations in subsequent periods.

Certain of our product sales are sold in multiple-element arrangements including networking hardware with embedded software products and support, which are considered separate units of accounting. For certain of our products, software and non-software components function together to deliver the tangible products' essential functionality.

We allocate revenue to each element in a multiple-element arrangement based upon the relative selling price. When applying the relative selling price method, we determine the selling price for each deliverable using vendor-specific objective evidence, or VSOE, of selling price, if it exists, or third-party evidence, or TPE, of selling price. If neither VSOE nor TPE of selling price exist for a deliverable, we use our best estimate of selling price for that deliverable. Revenue allocated to each element is then recognized when the basic revenue recognition criteria are met for each element. Revenue related to support is deferred and recognized ratably over the contractual period.

We determine VSOE based on our normal pricing and discounting practices for the specific product or service when sold separately. In determining VSOE, we require that a substantial majority of the selling prices for a product or service fall within a reasonably narrow pricing range. For support, we consider stated renewal rates in determining VSOE.

In most instances, we are not able to establish VSOE for all deliverables in an arrangement with multiple elements. When VSOE cannot be established, we attempt to establish the selling price for each element based on TPE. When we are unable to establish selling price using VSOE or TPE, we use best estimated selling price, or BESP, in our allocation of the arrangement consideration. The objective of BESP is to determine the price at which we would transact a sale if the product or service were sold on a stand-alone basis. We determine BESP for a product by considering multiple factors including, but not limited to, geographies, market conditions, competitive landscape, internal costs, gross margin objectives and pricing practices taking into consideration our go-to-market strategy.

We enter into development agreements with some of our customers and recognize revenue from these agreements upon completion and acceptance by the customer of contract deliverables or as services are provided, depending on the terms of the arrangement. Revenue is deferred for any amounts billed or received prior to completion or delivery of services. As we retain the intellectual property generated from these development agreements, costs related to these arrangements are included in research and development expense.

Revenue from upfront payments for the licensing of our patents is recognized when the arrangement is mutually signed, if there is no future delivery or future performance obligation and all other criteria are met. Revenue from guaranteed royalty streams are recognized when paid, or collection is reasonably assured and all other criteria are met. When patent licensing arrangements include royalties for future sales of the licensees' products using our licensed patented technology, revenue is recognized when the royalty report is received from the licensee, at which time the sales price is determinable, provided that all other criteria have been met.

Research and development. Research and development expense consists primarily of personnel costs for our engineers and third parties engaged in the design and development of our products, software and technologies, including salary, bonus and stock-based compensation expense, project material costs, services and depreciation. Such costs are charged to research and development expense as they are incurred.

Stock-based compensation expense. We recognize compensation expense for time-based restricted stock units, or RSUs, using the straight-line amortization method based on the fair value of RSUs on the date of grant. The fair value of RSUs is the closing market price of Broadcom common stock on the date of grant, reduced by the present value of dividends expected to be paid on Broadcom common stock prior to vesting. We recognize compensation expense for time-based stock options and employee stock purchase plan rights under the Broadcom Limited Second Amended and Restated Employee Share Purchase Plan, as amended, or ESPP, based on the estimated grant-date fair value determined using the Black-Scholes valuation model with a straight-line amortization method.

Certain equity awards include both service and market conditions. The fair value of market-based awards is estimated on the date of grant using the Monte Carlo simulation technique. Compensation expense for market-based awards is amortized based upon a graded vesting method over the service period.

We estimate forfeitures expected to occur and recognize stock-based compensation expense for such awards expected to vest. Changes in the estimated forfeiture rates can have a significant effect on stock-based compensation expense since the effect of adjusting the rate is recognized in the period the forfeiture estimate is changed.

Shipping and handling costs. Our shipping and handling costs charged to customers are included in net revenue and the associated expense is included in cost of products sold in the consolidated statements of operations for all periods presented.

Litigation and settlement cost. We are involved in legal actions and other matters arising in our recent business acquisitions and in the normal course of business. We recognize an estimated loss contingency when the outcome is probable prior to issuance of the consolidated financial statements and we are able to reasonably estimate the amount or range of any possible loss.

Taxes on income. We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the consolidated financial statements and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We recognize net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. If we determine that we are able to realize our deferred income tax assets in the future in excess of their net carrying values, we adjust the valuation allowance and reduce the provision for income taxes. Likewise, if we determine that we are not be able to realize all or part of our net deferred tax assets, we increase the provision for income taxes in the period such determination is made.

We account for uncertainty in income taxes in accordance with the applicable accounting guidance on income taxes. This guidance provides that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits.

Net income (loss) per share. Basic net income (loss) per share is computed by dividing net income (loss) attributable to common stock by the weighted-average number of shares of common stock outstanding during the period. Diluted net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of shares of common stock and potentially dilutive shares of common stock outstanding during the period. Diluted shares outstanding include the dilutive effect of in-the-money stock options, unvested RSUs and ESPP rights (together referred to as equity awards). Diluted shares outstanding also included shares issuable upon the exchange of LP Units for fiscal year 2016. Potentially dilutive shares whose effect would have been antidilutive are excluded from the computation of diluted net income (loss) per share.

The dilutive effect of equity awards is calculated based on the average stock price for each fiscal period, using the treasury stock method. Under the treasury stock method, the amount the employee must pay for exercising stock options and to purchase shares under the ESPP and the amount of compensation cost for future service that we have not yet recognized are collectively assumed to be used to repurchase shares. For fiscal year 2016, the amount of tax benefits that would be recognized when equity awards become deductible for income tax purposes was also assumed to be used to repurchase shares.

The dilutive effect of LP Units was calculated using the if-converted method. The if-converted method assumed that the LP Units were converted at the beginning of the reporting period and included net loss attributable to noncontrolling interest for fiscal year 2016.

Reclassifications. Certain reclassifications have been made to the prior period consolidated balance sheet and statements of cash flows. These reclassifications have no impact on the previously reported net assets or net cash activities.

Recently Adopted Accounting Guidance

In the first quarter of fiscal year 2018, we early adopted guidance issued by the Financial Accounting Standards Board, or FASB, in October 2016 related to the recognition of income tax consequences of an intra-entity transfer of an asset other than inventory. The standard requires a modified-retrospective transition method by means of a cumulative-effect adjustment as of the beginning of the period in which the guidance is adopted. The adoption of this guidance resulted in a decrease in current and long-term prepaid tax expense of $67 million and $199 million, respectively, an increase of $252 million to our accumulated deficit and a decrease of $14 million to our noncontrolling interest.

In the second quarter of fiscal year 2018, we early adopted guidance issued by the FASB in February 2018 that allows companies to reclassify stranded income tax effects resulting from the U.S. Tax Cuts and Jobs Act, or the 2017 Tax Reform Act, from accumulated other comprehensive loss to retained earnings. The stranded income tax effects resulted from the change in the federal tax rate for deferred taxes recorded in accumulated other comprehensive loss. The adoption of this guidance resulted in a cumulative-effect adjustment as of the beginning of the second quarter of fiscal year 2018, which consisted of an increase to our accumulated other comprehensive loss of $16 million, an increase to retained earnings of $15 million and a $1 million increase to noncontrolling interest.

Recent Accounting Guidance Not Yet Adopted

In August 2016, the FASB issued guidance related to the classification of certain transactions on the statement of cash flows. This guidance will be effective for the first quarter of our fiscal year 2019; however, early adoption is permitted. We will present our statements of cash flows in accordance with this guidance for the affected transactions occurring subsequent to adoption.

In February 2016, the FASB issued guidance related to the accounting for leases, which among other things, requires a lessee to recognize lease assets and lease liabilities on the balance sheet for operating leases. This guidance will be effective for the first quarter of our fiscal year 2020. The new guidance is required to be applied using a modified retrospective approach. We are evaluating the impact that this guidance will have on our consolidated financial statements, consisting primarily of a balance sheet gross up of right-of-use assets and lease liabilities on the consolidated balance sheets upon adoption, which will increase the Company's total assets and liabilities.

In January 2016, the FASB issued guidance related to the recognition, measurement, presentation and disclosure of financial instruments and requires, among others, equity securities to be measured at fair value with changes in fair value recognized through net income. The guidance is required to be applied by means of a cumulative-effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption, with other amendments related specifically to equity securities without readily determinable fair values applied prospectively. This guidance will be effective for the first quarter of our fiscal year 2019. We are evaluating the impact that this guidance will have on our consolidated financial statements, including other long-term assets and other income, net, for changes in fair value of equity securities.

In May 2014, the FASB issued guidance that outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance. The effective date of the guidance, as amended, will be the first quarter of our fiscal year 2019. The new standard creates a single source of revenue guidance under GAAP, eliminating industry-specific guidance.

The underlying principle of the standard is to recognize revenue when a customer obtains control of promised goods or services at an amount that reflects the consideration that is expected to be received in exchange for those goods or services. An entity should apply a five-step approach for recognizing revenue as follows (1) identify the contract with a customer; (2) identify the performance obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligations in the contract; and (5) recognize revenue when, or as, the entity satisfies a performance obligation. The standard also requires increased disclosures including the nature, amount, timing, and uncertainty of revenues and cash flows related to contracts with customers.

The standard allows two methods of adoption: (1) retrospectively to each prior period presented (“full retrospective method”), or (2) retrospectively with the cumulative effect recognized in retained earnings as of the date of adoption ("modified retrospective method"). We plan to adopt the new standard using the modified retrospective method at the beginning of our first quarter of fiscal year 2019. We are finalizing our analysis to quantify the adoption impact of the provisions of the new standard. We expect to use the input method to determine our revenue from development arrangements that are currently recognized upon completion and acceptance of our contract deliverables.

3. Acquisitions

Acquisition of Brocade

On November 17, 2017, or the Brocade Acquisition Date, we acquired Brocade, or the Brocade Merger. Brocade was a supplier of networking hardware, software and services, including Fibre Channel Storage Area Network, or FC SAN, solutions and Internet Protocol Networking, or IP Networking, solutions. We acquired Brocade to enhance our position as a provider of enterprise storage connectivity solutions, broaden our portfolio for enterprise storage, and to increase our ability to address the evolving needs of our original equipment manufacturer, or OEM, customers. We financed the Brocade Merger with a portion of the net proceeds from the issuance of the 2017 Senior Notes, as defined and discussed in further detail in Note 8. "Borrowings," as well as with cash on hand.

Purchase Consideration

		(In millions)
Cash paid for outstanding Brocade common stock	$	5,298
Cash paid by Broadcom to retire Brocade's term loan		701
Cash paid for Brocade equity awards		31
Fair value of partially vested assumed equity awards		8
Total purchase consideration		6,038
Less: cash acquired		1,250
Total purchase consideration, net of cash acquired	$	4,788

We assumed all unvested Brocade stock options, RSUs and performance stock units, or PSUs, held by continuing employees. The portion of the fair value of partially vested equity awards associated with prior service of Brocade employees represents a component of the total consideration as presented above. All vested in-the-money Brocade stock options, after giving effect to any acceleration, were cashed out upon the completion of the Brocade Merger. RSUs and PSUs were valued based on our share price as of the Brocade Acquisition Date.

The following table presents our allocation of the total purchase price, net of cash acquired:

		Estimated Fair Value
		(In millions)
Current assets	$	1,297
Goodwill		2,187
Intangible assets		3,396
Other long-term assets		82
Total assets acquired		6,962
Current portion of long-term debt		(856)
Other current liabilities		(374)
Long-term debt		(38)
Other long-term liabilities		(906)
Total liabilities assumed		(2,174)
Fair value of net assets acquired	$	4,788

Goodwill is primarily attributable to the assembled workforce and anticipated synergies and economies of scale expected from the integration of the Brocade business. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved as a result of the Brocade Merger. Goodwill is not deductible for tax purposes.

Current assets included assets held-for-sale related to Brocade's IP Networking business, which was not aligned with our strategic objectives. On December 1, 2017, we sold this business to ARRIS International plc, or ARRIS, for cash consideration of $800 million, before contractual working capital adjustments. In connection with this sale, we indemnified ARRIS for $116 million of potential income tax liabilities. We provided transitional services as short-term assistance to ARRIS in assuming the operations of the purchased business. We do not have any material continuing involvement with this business and have presented its results in discontinued operations.

Current assets also included assets held-for-sale for Brocade’s headquarters, which was sold for $224 million during fiscal year 2018, for no gain or loss.

Our results of continuing operations for fiscal year 2018 included $1,780 million of net revenue attributable to Brocade. It is impracticable to determine the effect on net income attributable to Brocade as we have integrated a substantial portion of Brocade into our ongoing operations. The results of operations of Brocade were primarily included in our enterprise storage segment. Transaction costs of $29 million related to the Brocade Merger were included in selling, general and administrative expense for fiscal year 2018.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 2,925	10
Customer contracts and related relationships	255	11
Trade name and other	61	6
Total identified finite-lived intangible assets	3,241	
IPR&D	155	N/A
Total identified intangible assets	$ 3,396	

Developed technology relates to products for FC SAN applications. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of Brocade. Customer contracts and related relationships were valued using the distributor method and the with-and-without-method under the income approach. The distributor method determines the fair value by measuring the economic profits generated by an intermediary, which in our case represents OEM customers. In the with-and-without method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. In both instances, the economic useful life was determined based on historical customer turnover rates.

Trade name relates to the “Brocade” trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

The fair value of IPR&D was determined using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the IPR&D, less charges representing the contribution of other assets to those cash flows.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the Brocade Acquisition Date.

The following table summarizes the details of IPR&D by category at the Brocade Acquisition Date:

Description	IPR&D	Percentage of Completion	Estimated Cost to Complete	Expected Release Date (By Fiscal Year)

			(Dollars in millions)			
Directors	$	64	72 %	$	45	2019
Switches	$	50	81 %	$	21	2018
Embedded	$	31	74 %	$	22	2019
Networking software	$	10	73 %	$	27	2018

A discount rate of 11% was applied to the projected cash flows to reflect the risk related to these IPR&D projects. The discount rate represents a premium of 1% over the weighted-average cost of capital to reflect the higher risk and uncertainty of the cash flows for IPR&D relative to the overall businesses.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for each of the periods presented, as if Brocade had been acquired as of the beginning of fiscal year 2017. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to stock-based compensation expense, the purchase accounting effect on inventory acquired, restructuring charges related to the acquisition and transaction costs. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2017 or of the results of our future operations of the combined business.

	Fiscal Year	
	2018	**2017**
Pro forma net revenue	$ 20,978	$ 19,441
Pro forma net income attributable to common stock	$ 12,408	$ 986

Acquisition of Broadcom Corporation

On February 1, 2016, or the Broadcom Acquisition Date, we acquired BRCM, or the Broadcom Merger, for aggregate consideration, consisting of both cash and equity consideration, of approximately $28,758 million, net of cash acquired.

We funded the cash portion of the Broadcom Merger with the net proceeds from the issuance of the term loan facilities provided for under our guaranteed, collateralized credit agreement entered into on February 1, 2016, or the 2016 Credit Agreement, as well as cash on hand of the combined companies. The 2016 Credit Agreement provided for a Term A loan facility in the aggregate principal amount of $4,400 million, a Term B-1 dollar loan facility in the aggregate principal amount of $9,750 million, or the Term B-1 Loan, a Term B-1 euro loan facility in the aggregate principal amount of €900 million, equivalent to $978 million as of February 1, 2016, and a Term B-2 loan facility in the aggregate principal amount of $500 million.

BRCM was a leader in semiconductor solutions for wired and wireless communications and provided a broad portfolio of highly-integrated system-on-a-chip solutions that seamlessly deliver voice, video, data and multimedia connectivity in the home, office and mobile environments. We acquired BRCM to position us as a global diversified leader in wired and wireless communication semiconductors, to deepen our broad portfolios, and to enable us to better address the evolving needs of customers across the wired and wireless end markets.

Purchase Consideration

	(In millions)
Cash for outstanding BRCM common stock	$ 16,798
Fair value of Broadcom common stock issued for outstanding BRCM common stock	15,438
Fair value of Partnership LP units issued for outstanding BRCM common stock	3,140
Fair value of partially vested assumed RSU awards	182
Cash for vested BRCM equity awards	137
Effective settlement of pre-existing relationships	11
Total purchase consideration	35,706

Less: cash acquired		6,948
Total purchase consideration, net of cash acquired	$	28,758

We issued 112 million shares of common stock and the Partnership issued 23 million Partnership LP Units, all of which are valued and presented in the above table, to former BRCM shareholders in the Broadcom Merger. Broadcom also assumed unvested RSUs originally granted by BRCM and converted them into 6 million Broadcom RSUs. The portion of the fair value of partially vested assumed RSUs associated with prior service of BRCM employees represented a component of the total consideration, as presented above, and was valued based on Broadcom’s stock price as of the Broadcom Acquisition Date.

Table of Contents

The following table presents our allocation of the total purchase price, net of cash acquired:

	Fair Value
	(In millions)
Trade accounts receivable	$ 669
Inventory	1,853
Assets held-for-sale	833
Other current assets	194
Property, plant and equipment	889
Goodwill	22,992
Intangible assets	14,808
Other long-term assets	121
Total assets acquired	42,359
Accounts payable	(559)
Employee compensation and benefits	(104)
Current portion of long-term debt	(1,475)
Other current liabilities	(780)
Long-term debt	(139)
Other long-term liabilities	(10,544)
Total liabilities assumed	(13,601)
Fair value of net assets acquired	$ 28,758

Goodwill is primarily attributable to the assembled workforce, anticipated synergies and economies of scale expected from the operations of the combined company. The synergies include certain cost savings, operating efficiencies, and other strategic benefits projected to be achieved as a result of the Broadcom Merger. Goodwill is not deductible for tax purposes.

The assets held-for-sale represented those BRCM businesses that were not aligned with our strategic objectives. During fiscal year 2016, we sold certain BRCM businesses for aggregate cash proceeds of $830 million. In connection with these sales, we provided transitional services to the buyers as short-term assistance in assuming the operations of the purchased businesses. We do not have any material continuing involvement with these businesses and have presented their results in discontinued operations.

Our results of continuing operations for fiscal year 2016 included $6,993 million of net revenue attributable to BRCM. It is impracticable to determine the effect on net loss attributable to BRCM for fiscal year 2016 as we immediately integrated BRCM into our ongoing operations. Transaction costs of $42 million incurred related to the Broadcom Merger were included in selling, general and administrative expense in the consolidated statements of operations for fiscal year 2016.

Intangible Assets

	Fair Value	Weighted-Average Amortization Periods
	(In millions)	(In years)
Developed technology	$ 9,010	6
Customer contracts and related relationships	2,703	2
Order backlog	750	< 1

Trade name	350	17
Other	45	16
Total identified finite-lived intangible assets	12,858	
IPR&D	1,950	N/A
Total identified intangible assets, net of assets held-for-sale	14,808	
Intangible assets included in assets held-for-sale	320	
Identified intangible assets	$ 15,128	

Developed technology relates to products for wired and wireless communication applications. We valued the developed technology using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the developed technology less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on the technology cycle related to each developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of BRCM. Customer contracts and related relationships were valued using the with-and-without-method under the income approach. In this method, the fair value was measured by the difference between the present values of the cash flows with and without the existing customers in place over the period of time necessary to reacquire the customers. The economic useful life was determined based on historical customer turnover rates.

Order backlog represents business under existing contractual obligations. The fair value of backlog was determined using the multi-period excess earnings method under the income approach based on expected operating cash flows from future contractual revenue. The economic useful life was determined based on the expected life of the backlog and the cash flows over the forecast period.

Trade name relates to the “Broadcom” trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This valuation method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecasted periods.

The fair value of IPR&D was determined using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the IPR&D, less charges representing the contribution of other assets to those cash flows.

We believe the amounts of purchased intangible assets recorded above represented the fair values of, and approximated the amounts a market participant would pay for, these intangible assets.

The following table summarizes the details of IPR&D by category as of the Broadcom Acquisition Date:

Description	IPR&D	Percentage of Completion	Estimated Cost to Complete	Expected Release Date (By Fiscal Year)
		(Dollars in millions)		
Set-top box solutions	$ 90	56 %	$ 90	2016 - 2017
Broadband carrier access solutions	$ 390	34 %	$ 376	2016 - 2018
Carrier switch solutions	$ 270	51 %	$ 255	2016 - 2019
Compute and connectivity solutions	$ 170	61 %	$ 136	2016 - 2018
Physical layer product solutions	$ 190	51 %	$ 71	2016 - 2019
Wireless connectivity combo solutions	$ 770	57 %	$ 364	2016 - 2018
Touch controllers	$ 70	39 %	$ 21	

Discount rates of 14% and 16% were applied to the projected cash flows to reflect the risk related to these wired and wireless IPR&D projects, respectively. These discount rates represent a premium of 2% over the respective wired and wireless weighted-average cost of capital to reflect the higher risk and uncertainty of the cash flows for IPR&D relative to the overall businesses.

During fiscal year 2016, we wrote off $411 million of acquired IPR&D to restructuring, impairment and disposal charges as we will no longer develop and invest in these projects. The majority of these abandoned IPR&D projects related to wireless connectivity combo and broadband carrier access solutions.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for fiscal year 2016, as if BRCM had been acquired as of the beginning of fiscal year 2015. The unaudited pro forma information includes adjustments to amortization and depreciation for intangible assets and property, plant and equipment acquired, adjustments to stock-based compensation expense, the purchase accounting effect on inventory acquired, interest expense for the additional indebtedness incurred to complete the acquisition, restructuring charges related to the acquisition and transaction costs. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of the consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2015 or of the results of future operations of the combined business.

	Fiscal Year 2016
	(In millions)
Pro forma net revenue	$ 15,281
Pro forma net loss attributable to common stock	$ (1,291)

4. Supplemental Financial Information

Cash and Cash Equivalents

Cash equivalents included $1,406 million and $6,002 million of time deposits as of November 4, 2018 and October 29, 2017, respectively. As of November 4, 2018 and October 29, 2017, cash equivalents also included $202 million and $401 million, respectively, of money-market funds. For time deposits, carrying value approximates fair value due to the short-term nature of the instruments. The fair value of money-market funds, which was consistent with their carrying value, was determined using unadjusted prices in active, accessible markets for identical assets, and as such they were classified as Level 1 assets in the fair value hierarchy.

Accounts Receivable Factoring

We sell certain of our trade accounts receivable on a non-recourse basis to third-party financial institutions pursuant to factoring agreements. We account for these transactions as sales of receivables and present cash proceeds as cash provided by operating activities in the consolidated statements of cash flows. Total trade accounts receivable sold under the factoring agreements were $362 million and $178 million during fiscal years 2018 and 2017, respectively. Factoring fees for the sales of receivables were recorded in other income, net and were not material for any period presented.

Inventory

	November 4, 2018	October 29, 2017
	(In millions)	
Finished goods	$ 483	$ 562
Work-in-process	505	696
Raw materials	136	189
Total inventory	$ 1,124	$ 1,447

Property, Plant and Equipment, Net

	November 4, 2018	October 29, 2017
	(In millions)	
Land	$ 189	$ 177
Construction in progress	67	411
Buildings and leasehold improvements	1,016	579
Machinery and equipment	3,257	2,925
Total property, plant and equipment	4,529	4,092
Accumulated depreciation and amortization	(1,894)	(1,493)
Total property, plant and equipment, net	$ 2,635	$ 2,599

Depreciation expense was $515 million, $451 million and $402 million for fiscal years 2018, 2017 and 2016, respectively.

As of November 4, 2018 and October 29, 2017, we had $22 million and $122 million, respectively, of unpaid purchases of property, plant and equipment included in accounts payable and other current liabilities. Amounts reported as unpaid purchases are presented as cash outflows from investing activities for purchases of property, plant and equipment in the consolidated statements of cash flows in the period in which they are paid.

Other Current Assets

	November 4, 2018	October 29, 2017
	(In millions)	
Prepaid expenses	$ 243	$ 440
Other receivables	65	155
Other (miscellaneous)	58	129
Total other current assets	$ 366	$ 724

Other Current Liabilities

	November 4, 2018	October 29, 2017
	(In millions)	
Interest payable	$ 165	$ 136
Deferred revenue	164	51
Accrued rebates	161	124
Tax liabilities	162	123
Other (miscellaneous)	160	247
Total other current liabilities	$ 812	$ 681

Other Long-Term Liabilities

	November 4, 2018	October 29, 2017
	(In millions)	
Unrecognized tax benefits (a) (b)	$ 3,088	$ 1,011
Deferred tax liabilities (a)	169	10,019
Tax indemnification liability	116	—
Other (miscellaneous)	263	242
Total other long-term liabilities	$ 3,636	$ 11,272

(a) Refer to Note 10. "Income Taxes" for additional information regarding these balances.

(b) Includes accrued interest and penalties.

Accumulated Other Comprehensive Loss

	Fiscal Year	
	2018	2017
	(In millions)	
Beginning balance	$ (91)	$ (134)
Changes in accumulated other comprehensive loss:		
Unrealized gain (loss) on defined benefit pension plans and post-retirement benefit plans before reclassification	(11)	63
Amounts reclassified out of accumulated other comprehensive loss (a)	1	1
Tax effects	2	(21)
Other comprehensive income (loss)	(8)	43

Cumulative effect of accounting change	(16)	—
Ending balance	$ (115)	$ (91)

(a) Relates to amortization of actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans and are included in the computation of net periodic benefit (income) cost (refer to Note 7.

Table of Contents

"Retirement Plans and Post-Retirement Benefits" for additional information).

Other Income, Net

	Fiscal Year		
	2018	2017	2016
	(In millions)		
Other income	$ 30	$ 43	$ 27
Interest income	114	44	10
Other expense	—	(25)	(27)
Other income, net	$ 144	$ 62	$ 10

Other income includes gains (losses) on foreign currency remeasurement and other miscellaneous items.

5. Goodwill and Intangible Assets

Goodwill

	Wired Infrastructure	Wireless Communications	Enterprise Storage	Industrial & Other	Total
	(In millions)				
Balance as of October 30, 2016	$ 17,641	$ 5,952	$ 995	$ 144	$ 24,732
Broadcom Merger adjustments	(25)	(7)	—	—	(32)
Acquisitions	6	—	—	—	6
Balance as of October 29, 2017	17,622	5,945	995	144	24,706
Acquisitions	83	—	2,117	7	2,207
Balance as of November 4, 2018	$ 17,705	$ 5,945	$ 3,112	$ 151	$ 26,913

During each of the fourth quarters of fiscal years 2018, 2017 and 2016, we completed our annual impairment assessments and concluded that goodwill was not impaired in any of these years.

Intangible Assets

	Gross Carrying Amount	Accumulated Amortization	Net Book Value
	(In millions)		
As of November 4, 2018:			
Purchased technology	$ 15,806	$ (6,816)	$ 8,990
Customer contracts and related relationships	1,792	(878)	914
Trade names	578	(170)	408
Other	239	(53)	186
Intangible assets subject to amortization	18,415	(7,917)	10,498
IPR&D	264	—	264
Total	$ 18,679	$ (7,917)	$ 10,762

As of October 29, 2017:			
Purchased technology	$ 12,724	$ (4,265)	$ 8,459
Customer contracts and related relationships	4,240	(3,100)	1,140
Trade names	528	(117)	411
Other	135	(25)	110
Intangible assets subject to amortization	17,627	(7,507)	10,120
IPR&D	712	—	712
Total	$ 18,339	$ (7,507)	$ 10,832

Table of Contents

Based on the amount of intangible assets subject to amortization at November 4, 2018, the expected amortization expense for each of the next five fiscal years and thereafter was as follows:

Fiscal Year:	Expected Amortization Expense
	(In millions)
2019	$ 2,882
2020	2,437
2021	1,945
2022	1,441
2023	650
Thereafter	1,143
Total	$ 10,498

The weighted-average amortization periods remaining by intangible asset category were as follows:

Amortizable intangible assets:	November 4, 2018	October 29, 2017
	(In years)	
Purchased technology	6	5
Customer contracts and related relationships	5	4
Trade names	12	13
Other	10	10

6. Net Income (Loss) Per Share

	Fiscal Year		
	2018	2017	2016
	(In millions, except per share data)		
Numerator - Basic:			
Income (loss) from continuing operations	$ 12,629	$ 1,790	$ (1,749)
Less: Income (loss) from continuing operations attributable to noncontrolling interest	352	92	(116)
Income (loss) from continuing operations attributable to common stock	12,277	1,698	(1,633)
Loss from discontinued operations, net of income taxes	(19)	(6)	(112)
Less: Loss from discontinued operations, net of income taxes, attributable to noncontrolling interest	(1)	—	(6)
Loss from discontinued operations, net of income taxes, attributable to common stock	(18)	(6)	(106)
Net income (loss) attributable to common stock	$ 12,259	$ 1,692	$ (1,739)

Numerator - Diluted:

Income (loss) from continuing operations	$ 12,277	$ 1,698	$ (1,749)
Loss from discontinued operations, net of income taxes	(18)	(6)	(112)
Net income (loss)	$ 12,259	$ 1,692	$ (1,861)

Denominator:			
Weighted-average shares outstanding - basic	418	405	366
Dilutive effect of equity awards	13	16	—
Exchange of noncontrolling interest	—	—	17
Weighted-average shares outstanding - diluted	431	421	383
Basic income (loss) per share:			
Income (loss) per share from continuing operations	$ 29.37	$ 4.19	$ (4.46)
Loss per share from discontinued operations	(0.04)	(0.01)	(0.29)
Net income (loss) per share	$ 29.33	$ 4.18	$ (4.75)
Diluted income (loss) per share:			
Income (loss) per share from continuing operations	$ 28.48	$ 4.03	$ (4.57)
Loss per share from discontinued operations	(0.04)	(0.01)	(0.29)
Net income (loss) per share	$ 28.44	$ 4.02	$ (4.86)
Potentially dilutive shares excluded from the calculation of diluted income (loss) per share because their effect would have been antidilutive (a)	9	22	12

(a) For fiscal years 2018 and 2017, these weighted shares related to common stock shares issuable upon the exchange of LP Units prior to the effective time of the Mandatory Exchange (refer to Note 9. "Stockholders' Equity" for additional information). As a result, diluted net income per share excluded net income attributable to noncontrolling interest. For fiscal year 2016, these weighted shares related to antidilutive equity awards.

7. Retirement Plans and Post-Retirement Benefits

Pension and Post-Retirement Benefit Plans

Defined Benefit Plans. The U.S. defined benefit pension plans include a management plan and a represented plan. Benefits under the management plan are provided under either an adjusted career-average-pay program or a cash-balance program. Benefits under the represented plan are based on a dollar-per-month formula. Benefit accruals under the management plan were frozen in 2009. Participants in the adjusted career-average-pay program no longer earn service accruals. Participants in the cash-balance program no longer earn service accruals, but continue to earn 4% interest per year on their cash-balance accounts. There are no active participants under the represented plan. We also have a non-qualified supplemental pension plan in the United States that principally provides benefits based on compensation in excess of amounts that can be considered under the management plan. We also have pension plans covering certain non-U.S. employees.

Post-Retirement Benefit Plans. Certain of our U.S. employees who meet the retirement eligibility requirements as of their termination dates, may receive post-retirement medical benefits under our retiree medical account program. Eligible employees receive a medical benefit spending account of $55,000 upon retirement to pay premiums for medical coverage through the maximum age of 75 as retiree.

Our group life insurance plan offers post-retirement life insurance coverage for certain U.S. employees.

Non-U.S Retirement Benefit Plans. In addition to the defined benefit plans for certain employees in Taiwan, India, Japan, Israel, Italy and Germany, other eligible employees outside of the U.S. receive retirement benefits under various defined contribution retirement plans. Eligibility is generally determined based on the terms of our plans and local statutory requirements.

Table of Contents

Net Periodic Benefit (Income) Cost

	Pension Benefits			Post-Retirement Benefits		
	Fiscal Year			Fiscal Year		
	2018	2017	2016	2018	2017	2016
	(In millions)					
Service cost	$ 4	$ 4	$ 3	$ —	$ —	$ —
Interest cost	51	53	59	3	3	3
Expected return on plan assets	(51)	(65)	(72)	(4)	(4)	(4)
Other	1	1	4	—	—	—
Net periodic benefit (income) cost	$ 5	$ (7)	$ (6)	$ (1)	$ (1)	$ (1)
Net actuarial (gain) loss	$ 14	$ (60)	$ 88	$ (3)	$ (3)	$ 11

Funded Status

	Pension Benefits		Post-Retirement Benefits	
	November 4, 2018	October 29, 2017	November 4, 2018	October 29, 2017
	(In millions)			
Change in plan assets:				
Fair value of plan assets — beginning of period	$ 1,426	$ 1,050	$ 83	$ 78
Actual return on plan assets	(65)	108	—	7
Employer contributions	130	361	—	—
Payments from plan assets	(93)	(93)	(2)	(2)
Foreign currency impact	(4)	—	—	—
Fair value of plan assets — end of period	1,394	1,426	81	83
Change in benefit obligations:				
Benefit obligations — beginning of period	1,508	1,566	80	79
Service cost	4	4	—	—
Interest cost	51	53	3	3
Actuarial gain	(102)	(13)	(7)	—
Benefit payments	(93)	(93)	(2)	(2)
Curtailments	—	(4)	—	—
Settlements	—	(8)	—	—
Plan amendment	3	—	—	—
Foreign currency impact	(7)	3	—	—
Benefit obligations — end of period	1,364	1,508	74	80
Overfunded (underfunded) status of benefit obligations (a)	$ 30	$ (82)	$ 7	$ 3
	$ (110)	$ (85)	$ (5)	$ (6)

Actuarial losses and prior service costs recognized in accumulated other comprehensive loss, net of taxes

(a) Substantially all amounts recognized in the consolidated balance sheets were recorded in other long-term assets and other long-term liabilities for all periods presented.

Plans with benefit obligations in excess of plan assets:

	Pension Benefits		Post-Retirement Benefits	
	November 4, 2018	October 29, 2017	November 4, 2018	October 29, 2017
	(In millions)			
Projected benefit obligations	$ 551	$ 701	$ —	$ —
Accumulated benefit obligations	$ 546	$ 696	$ 14	$ 15
Fair value of plan assets	$ 528	$ 603	$ —	$ —

Plans with benefit obligations less than plan assets:

	Pension Benefits		Post-Retirement Benefits	
	November 4, 2018	October 29, 2017	November 4, 2018	October 29, 2017
	(In millions)			
Projected benefit obligations	$ 813	$ 807	$ —	$ —
Accumulated benefit obligations	$ 812	$ 805	$ 60	$ 65
Fair value of plan assets	$ 866	$ 823	$ 81	$ 83

The fair value of pension plan assets at November 4, 2018 and October 29, 2017 included $147 million and $20 million, respectively, of assets for our non-U.S. pension plans.

The projected benefit obligations as of November 4, 2018 and October 29, 2017 included $129 million and $106 million, respectively, of obligations related to our non-U.S. plans. The accumulated benefit obligations as of November 4, 2018 and October 29, 2017 included $122 million and $100 million, respectively, of obligations related to our non-U.S. plans.

We currently expect to make contributions of $6 million to our defined benefit pension plans in fiscal year 2019.

Expected Future Benefit Payments

Fiscal Years:	Pension Benefits	Post-Retirement Benefits
	(In millions)	
2019	$ 93	$ 3
2020	$ 91	$ 3
2021	$ 91	$ 3
2022	$ 91	$ 3
2023	$ 91	$ 4
2024-2028	$ 445	$ 20

Defined Benefit Plan Investment Policy

Plan assets of the funded defined benefit pension plans are invested in funds held by third-party fund managers or are deposited into government-managed accounts in which we have no active involvement in and no control over investment strategy, other than establishing broad investment guidelines and parameters.

Our plan’s investment committee has set the investment strategy to fully match the liability. We direct the overall portfolio allocation and use a third-party investment consultant that has discretion to structure portfolios and select the investment managers within those allocation parameters. Multiple investment managers are utilized, including both active and passive management approaches. The plan assets are invested using the liability-driven investment strategy intended to minimize market and interest rate risks, and those assets are periodically rebalanced toward asset allocation targets.

The target asset allocation for U.S. plans reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plans. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. For both fiscal years 2018 and 2017, 100% of U. S. plan assets were allocated to fixed income, in line with the target allocation. The fixed income allocation is primarily directed toward long-term core bond investments, with smaller allocations to Treasury Inflation-Protected Securities and high-yield bonds.

Table of Contents

Fair Value Measurement of Plan Assets

	November 4, 2018			
	Fair Value Measurements at Reporting Date Using			
	Level 1	Level 2	Level 3	Total
	(In millions)			
Cash equivalents	$ 36 (a)	$ —	$ —	$ 36
Equity securities:				
Non-U.S. equity securities	19 (b)	—	—	19
Fixed-income securities:				
U.S. treasuries	—	80 (c)	—	80
Corporate bonds	—	1,229 (c)	—	1,229
Municipal bonds	—	17 (c)	—	17
Government bonds	—	13 (c)	—	13
Total plan assets	$ 55	$ 1,339	$ —	$ 1,394

	October 29, 2017			
	Fair Value Measurements at Reporting Date Using			
	Level 1	Level 2	Level 3	Total
	(In millions)			
Cash equivalents	$ 943 (a)	$ —	$ —	$ 943
Equity securities:				
Non-U.S. equity securities	7 (b)	—	—	7
Fixed-income securities:				
U.S. treasuries	—	39 (c)	—	39
Corporate bonds	—	393 (c)	—	393
Asset-backed and mortgage-backed securities	—	1 (c)	—	1
Municipal bonds	—	25 (c)	—	25
Government bonds	—	18 (c)	—	18
Total plan assets	$ 950	$ 476	$ —	$ 1,426

(a) Cash equivalents primarily included short-term investment funds which consisted of short-term money market instruments that were valued based on quoted prices in active markets.

(b) These equity securities were valued based on quoted prices in active markets.

(c) These amounts consisted of investments that were traded less frequently than Level 1 securities and were valued using inputs that included quoted prices for similar assets in active markets and inputs other than quoted prices that were observable for the asset, such as interest rates, yield curves, prepayment speeds, collateral performance, broker/dealer quotes and indices that were observable at commonly quoted intervals.

Post-Retirement Benefit Plan Investment Policy

Our overall investment strategy for the group life insurance plan is to allocate assets in a manner that seeks to both maximize the safety of promised benefits and minimize the cost of funding those benefits. The target asset allocation for plan assets reflects a risk/return profile that we believe is appropriate relative to the liability structure and return goals for the plan. We periodically review the allocation of plan assets relative to alternative allocation models to evaluate the need for adjustments based on forecasted liabilities and plan liquidity needs. We set the overall portfolio allocation and use an investment manager that directs the investment of funds consistent with that allocation. The investment manager invests the plan assets in index funds that it manages.

The following table presents the plan asset allocations by category:

	November 4, 2018		October 29, 2017	
	Actual	Target	Actual	Target
Commingled funds - U.S. equities	— %	— %	20 %	20 %
Commingled funds - Non-U.S. equities	—	—	20	20
Commingled funds - bonds	100	100	60	60
Total	100 %	100 %	100 %	100 %

Assumptions

The assumptions used to determine the benefit obligations and net periodic benefit (income) cost from our defined benefit and post-retirement benefit plans are presented in the table below. The expected long-term return on assets shown in the table below represents an estimate of long-term returns on investment portfolios primarily consisting of combinations of debt, equity and other investments, depending on the plan. The long-term rates of return are then weighted based on the asset classes (both historical and forecasted) in which we expect the pension and post-retirement funds to be invested. Discount rates reflect the current rate at which defined benefit and post-retirement benefit obligations could be settled based on the measurement dates of the plans, which in each case is our fiscal year end. The range of assumptions that are used for defined benefit pension plans reflects the different economic environments within various countries.

	Assumptions for Benefit Obligations as of		Assumptions for Net Periodic Benefit (Income) Cost Fiscal Year		
	November 4, 2018	October 29, 2017	2018	2017	2016
Defined benefit pension plans:					
Discount rate	0.50%-8.00%	0.50%-7.00%	0.50%-7.00%	0.50%-7.00%	0.75%-7.75%
Average increase in compensation levels	2.00%-10.00%	2.00%-11.00%	2.00%-11.00%	2.00%-9.15%	2.50%-11.72%
Expected long-term return on assets	N/A	N/A	1.50%-7.50%	0.25%-8.00%	1.50%-9.00%

	Assumptions for Benefit Obligations as of		Assumptions for Net Periodic Benefit (Income) Cost Fiscal Year		
	November 4, 2018	October 29, 2017	2018	2017	2016
Post-retirement benefits plans:					
Discount rate	4.30%-4.60%	3.40%-3.80%	3.40%-3.80%	3.30%-3.90%	3.90%-4.50%

Average increase in compensation levels	3.00%	3.00%	3.00%	3.50%	3.50%
Expected long-term return on assets	N/A	N/A	4.80%	4.40%	5.10%

We assume that the health care cost trend rate for fiscal year 2019 will be 6.7% and will decrease to the ultimate health care cost trend rate of 3.5% in fiscal year 2031.

A one percentage point increase or decrease in the assumed health care cost trend rates would not have had a material effect on the benefit obligations or service and interest cost components of the net periodic benefit cost for all the periods presented.

401(k) Defined Contribution Plans

Our eligible U.S. employees participate in company-sponsored 401(k) plans. Under these plans, we provide matching contributions to employees up to 6% of their eligible earnings. All matching contributions vest immediately. During fiscal years 2018, 2017 and 2016, we made contributions of $73 million, $61 million and $43 million, respectively, to the 401(k) plans.

Table of Contents

8. Borrowings

	Effective Interest Rate	November 4, 2018	October 29, 2017
		(In millions)	
2017 Senior Notes			
2.375% notes due January 2020	2.615%	$ 2,750	$ 2,750
3.000% notes due January 2022	3.214%	3,500	3,500
3.625% notes due January 2024	3.744%	2,500	2,500
3.875% notes due January 2027	4.018%	4,800	4,800
2.200% notes due January 2021	2.406%	750	750
2.650% notes due January 2023	2.781%	1,000	1,000
3.125% notes due January 2025	3.234%	1,000	1,000
3.500% notes due January 2028	3.596%	1,250	1,250
		17,550	17,550
Assumed BRCM Senior Notes			
2.70% notes due November 2018	2.700%	—	117
2.50% - 4.50% notes due August 2022 - August 2034	2.50% - 4.50%	22	22
		22	139
Assumed Brocade Convertible Notes			
1.375% convertible notes due January 2020	0.628%	37	—
Total principal amount outstanding		17,609	17,689
Less: Unaccreted discount and unamortized debt issuance costs		(116)	(141)
Carrying value of debt		$ 17,493	$ 17,548

2017 Senior Notes

During fiscal year 2017, BRCM and Broadcom Cayman Finance Limited, or together with BRCM referred to as the Subsidiary Issuers, issued $17,550 million of senior unsecured notes, or the 2017 Senior Notes. Our 2017 Senior Notes were fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by Broadcom-Singapore and the Partnership, subject to certain release conditions described in the indenture governing the 2017 Senior Notes, or the 2017 Indentures. On April 9, 2018, Broadcom, or Parent Guarantor, became a guarantor of the 2017 Senior Notes and entered into supplemental indentures with the Subsidiary Issuers and the trustee of the 2017 Senior Notes. At that time, Broadcom-Singapore, a guarantor at the issuance of the 2017 Senior Notes, became an indirect wholly-owned subsidiary of Broadcom and a subsidiary guarantor, or Subsidiary Guarantor, together with Parent Guarantor referred to as the Guarantors. In addition, the Partnership was released from its guarantee of the 2017 Senior Notes under each of the 2017 Indentures in accordance with their terms. Each series of 2017 Senior Notes pays interest semi-annually in cash in arrears on January 15 and July 15 of each year. As of November 4, 2018 and October 29, 2017, we accrued interest payable of $165 million and $136 million, respectively.

We may redeem all or a portion of our 2017 Senior Notes at any time prior to their maturity, subject to a specified make-whole premium as set forth in the 2017 Indentures. In the event of a change of control triggering event, holders of our 2017 Senior Notes will have the right to require us to purchase for cash, all or a portion of their 2017 Senior Notes at a redemption price of 101% of the aggregate principal amount plus accrued and unpaid interest. The 2017 Indentures also contain covenants that restrict, among other things, the ability of Broadcom and its subsidiaries to incur certain secured debt and to consummate certain sale and leaseback transactions and restrict the ability of the Parent Guarantor, the Subsidiary Issuers and the Subsidiary Guarantor to merge, consolidate or sell all or substantially all of their assets.

During fiscal year 2018, substantially all of the 2017 Senior Notes were tendered and exchanged for notes registered with the U.S. Securities and Exchange Commission, or SEC, with substantially identical terms.

We were in compliance with all of the covenants related to the 2017 Senior Notes as of November 4, 2018.

Assumed BRCM Senior Notes

As a result of the Broadcom Merger, we assumed $1,614 million of BRCM's outstanding senior unsecured notes, or the Assumed BRCM Senior Notes, at fair value on the Broadcom Acquisition Date. During fiscal years 2018 and 2016, we repaid $117 million and $1,475 million of the Assumed BRCM Senior Notes, respectively.

We were in compliance with all of the covenants related to the Assumed BRCM Senior Notes as of November 4, 2018.

Assumed Brocade Debt

As a result of the Brocade Merger, we assumed $575 million in aggregate principal amount of Brocade's 1.375% convertible senior unsecured notes due 2020, or the Assumed Brocade Convertible Notes. The Brocade Merger was a "fundamental change" as well as a "make-whole fundamental change" as defined under the terms of the indenture governing the Assumed Brocade Convertible Notes. Accordingly, the holders of the Assumed Brocade Convertible Notes received the right to require us to repurchase their notes for cash. During fiscal year 2018, we repurchased $537 million in aggregate principal amount for $548 million at a conversion rate of $1,018 for each $1,000 of principal surrendered for conversion. The remaining outstanding Assumed Brocade Convertible Notes are convertible into cash at a conversion rate of $812 for each $1,000 of principal. We were in compliance with all of the covenants related to the Assumed Brocade Convertible Notes as of November 4, 2018.

We also assumed $300 million of Brocade's 4.625% senior unsecured notes due 2023. On January 16, 2018, we redeemed all of these outstanding notes for a total payment of $308 million.

Fair Value of Debt

As of November 4, 2018, the estimated aggregate fair value of our borrowings was $16,627 million, which was classified as Level 2 as we used quoted prices from less active markets.

Future Principal Payments of Debt

The future contractual maturities of borrowings as of November 4, 2018 are as follows:

Fiscal Year:	**Future Scheduled Principal Payments**
	(In millions)
2019	$ —
2020	2,787
2021	750
2022	3,509
2023	1,000
Thereafter	9,563
Total	$ 17,609

9. Stockholders' Equity

Completion of the Redomiciliation Transaction

For the period prior to the Redomiciliation Transaction, our stockholders' equity reflected Broadcom-Singapore's outstanding ordinary shares, all of which were publicly traded on The Nasdaq Global Select Market. After the close of market trading on April 4, 2018, all Broadcom-Singapore outstanding ordinary shares were exchanged on a one-for-one basis for newly issued shares of Broadcom common stock, and Broadcom-Singapore became an indirect wholly-owned subsidiary of Broadcom.

In conjunction with the Redomiciliation Transaction and pursuant to the Mandatory Exchange, all outstanding LP Units held by the limited partners were mandatorily exchanged for approximately 22 million newly issued shares of Broadcom common stock on a one-for-one basis. As a result, all limited partners of the Partnership became common stockholders of Broadcom. In addition, all related outstanding special preference shares of Broadcom-Singapore were automatically redeemed upon the Mandatory Exchange.

Singapore Statutory Scheme of Arrangement

For the period prior to the Broadcom Acquisition Date, our stockholders' equity reflected outstanding ordinary shares of Avago. Pursuant to a Singapore statutory scheme of arrangement, Broadcom-Singapore issued 278 million shares to holders of Avago ordinary shares and issued 112 million shares to former BRCM stockholders pursuant to the Broadcom Merger.

Consequently, the number of shares outstanding increased from 278 million ordinary shares on January 31, 2016 to 390 million shares on February 1, 2016. Both Avago and BRCM became indirect subsidiaries of Broadcom-Singapore and the Partnership, where Broadcom-Singapore was the sole General Partner of the Partnership. In connection with the Broadcom Merger, Broadcom-Singapore also issued 23 million special preference shares.

Noncontrolling Interest

As of October 29, 2017 and immediately prior to the Redomiciliation Transaction, the limited partners held a noncontrolling interest of approximately 5% in the Partnership through their ownership of LP Units. Accordingly, net income (loss) attributable to our common stock in our consolidated statements of operations excluded the noncontrolling interest's proportionate share of the results for periods prior to the Redomiciliation Transaction. In addition, we presented the proportionate share of equity attributable to the noncontrolling interest as a separate component of total equity within our consolidated balance sheet as of October 29, 2017 and consolidated statements of equity for the periods prior to the Redomiciliation Transaction.

Dividends and Distributions

	Fiscal Year		
	2018	**2017**	**2016**
	(In millions, except per share data)		
Cash dividends and distributions declared and paid per share/unit	$ 7.00	$ 4.08	$ 1.94
Cash dividends paid to stockholders	$ 2,921	$ 1,653	$ 716
Cash distributions paid to limited partners	$ 77	$ 92	$ 34

Stock Repurchase Program

In April 2018, our Board of Directors authorized the repurchase of up to $12 billion of our common stock from time to time on or prior to November 3, 2019, the end of our fiscal year 2019. During fiscal year 2018, we repurchased and retired approximately 32 million shares of our common stock for $7,258 million at a weighted average price of $227.60 under this stock repurchase program. As of November 4, 2018, $4,742 million of the current authorization remained available under our stock repurchase program.

Repurchases under our stock repurchase program may be effected through a variety of methods, including open market or privately negotiated purchases. The timing and number of shares of common stock repurchased will depend on a variety of factors, including price, general business and market conditions and alternative investment opportunities. We are not obligated to repurchase any specific number of shares of common stock, and we may suspend or discontinue our stock repurchase program at any time.

Equity Incentive Award Plans

Stock-based incentive awards are provided to employees and directors under the terms of various Broadcom equity incentive plans.

2009 Plan

In July 2009, our Board of Directors adopted, and our stockholders approved, the Avago Technologies Limited 2009 Equity Incentive Award Plan, or the 2009 Plan, to authorize the grant of options, stock appreciation rights, RSUs, dividend equivalents, performance awards, and other stock-based awards. A total of 20 million shares of common stock were initially reserved for issuance under the 2009 Plan, subject to annual increases starting in fiscal year 2012. The amount of the annual increase is equal to the least of (a) 6 million shares, (b) 3% of the common stock outstanding on the last day of the immediately preceding fiscal year and (c) such smaller number of common stock as determined by our Board. However, no more than 90 million shares of common stock may be issued upon the exercise of equity awards issued under the 2009 Plan. The 2009 Plan became effective on July 27, 2009.

Options issued to employees under the 2009 Plan prior to March 2011 generally expire ten years following the date of grant. Since March 2011, options issued to employees under the 2009 Plan generally expire seven years after the date of grant. Options awarded to non-employees under this plan generally expire after five years. Options issued to both employees and non-employees under the 2009 Plan generally vest over a four-year period from the date of grant and are granted with an exercise price equal to the fair market value on the date of grant. Any stock options cancelled or forfeited after July 27, 2009 under the equity incentive plans adopted prior to the 2009 Plan become available for issuance under the 2009 Plan.

RSU awards granted to employees under the 2009 Plan generally vest in equal annual installments over four years. An RSU is an equity award that is granted with an exercise price equal to zero and which represents the right to receive one share of our common stock immediately upon vesting.

As of November 4, 2018, 24 million shares remained available for issuance under the 2009 Plan.

2003 Plan

In connection with the acquisition of LSI Corporation, or LSI, we assumed the LSI 2003 Equity Incentive Plan, or the 2003 Plan, and outstanding unvested stock options and RSUs originally granted by LSI under the 2003 Plan that were held by continuing employees. At the time of the acquisition, these awards were converted to Broadcom stock options and RSUs, with adjustments made to the exercise price of stock options and the number of shares subject to stock options and RSU awards so that the intrinsic value of each award was approximately the same immediately before and immediately after the adjustment. These unvested options and RSUs vest in accordance with their original terms, generally vesting in equal annual installments over a four-year period from the original grant date. Options expire seven years after the grant date. Under the 2003 Plan, we may grant to former employees of LSI and other employees who were not employees of Broadcom at the time of the acquisition restricted stock awards, RSUs, stock options and stock appreciation rights with an exercise price that is no less than the fair market value on the date of grant. No participant may be granted stock options covering more than four million shares or more than an aggregate of one million shares of restricted stock and RSUs in any fiscal year. Equity awards granted under the 2003 Plan following the LSI acquisition are expected to be on similar terms and consistent with similar grants made pursuant to the 2009 Plan. As of November 4, 2018, three million shares remained available for issuance under the 2003 Plan.

2012 Plan

In connection with the Broadcom Merger, we assumed the BRCM 2012 Stock Incentive Plan, or the 2012 Plan, and outstanding unvested RSUs originally granted by BRCM under the 2012 Plan that were held by continuing employees. At the time of the acquisition, these awards were converted to Broadcom RSUs, with adjustments made to the number of shares subject to RSU awards so that the intrinsic value of each award was approximately the same immediately before and immediately after the adjustment. These unvested RSUs vest in accordance with their original terms, generally vesting in equal quarterly installments over a four-year period from the original grant date. Under the 2012 Plan, we may grant to former employees of BRCM and other employees who were not employees of Broadcom at the time of the acquisition restricted stock awards, RSUs, stock options and stock appreciation rights with an exercise price that is no less than the fair market value on the date of grant. No participant may be granted stock options, restricted stock or RSUs, covering more than an aggregate of four million shares in any fiscal year. Equity awards granted under the 2012 Plan following the Broadcom Merger are expected to be on similar terms and consistent with similar grants made pursuant to the 2009 Plan. As of November 4, 2018, 90 million shares remained available for issuance under the 2012 Plan. The number of shares available for issuance under the 2012 Plan is subject to an annual increase of 12 million shares.

We also grant market-based RSUs with both a service condition and a market condition as part of our equity compensation programs under the 2009 Plan and 2012 Plan. The market-based RSUs generally vest over four years, subject to satisfaction of market conditions. During fiscal years 2018 and 2017, we granted market-based RSUs under which grantees may receive the number of shares ranging from 0% to 450% of the original grant at vesting based upon the total stockholder return, or TSR, on our common stock as compared to the TSR of an index group of companies.

Employee Stock Purchase Plan

The ESPP provides eligible employees with the opportunity to acquire an ownership interest in us through periodic payroll deductions, based on a 6-month look-back period, at a price equal to the lesser of 85% of the fair market value of our common stock at either the beginning or ending of the relevant offering period. The ESPP is structured as a qualified employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986. However, the ESPP is not intended to be a qualified pension, profit sharing or stock bonus plan under Section 401(a) of the Internal Revenue Code of 1986 and is not subject to the provisions of Employee Retirement Income Security Act of 1974. The ESPP will terminate on July 27, 2019 unless sooner terminated.

Stock-Based Compensation Expense

	Fiscal Year		
	2018	2017	2016
		(In millions)	
Cost of products sold	$ 86	$ 64	$ 48
Research and development	855	636	430
Selling, general and administrative	286	220	186
Total stock-based compensation expense (a)	$ 1,227	$ 920	$ 664
Income tax benefits for stock-based compensation	$ 181	$ 273	$ 89

(a) Does not include stock-based compensation related to discontinued operations recognized during fiscal years 2017 and 2016, which was included in loss from discontinued operations, net of income taxes in our consolidated statements of operations.

We have assumed an annualized forfeiture rate for RSUs of 5%. We will recognize additional expense if actual forfeitures are lower than we estimated, and will recognize a benefit if actual forfeitures are higher than we estimated.

As of November 4, 2018, the total unrecognized compensation cost related to unvested stock-based awards was $2,479 million, which is expected to be recognized over the remaining weighted-average service period of 2.7 years.

The following table summarizes the weighted-average assumptions utilized to calculate the fair value of market-based awards granted in the periods presented:

	Market-Based Awards		
	Fiscal Year		
	2018	2017	2016
Risk-free interest rate	2.4 %	1.7 %	1.2 %
Dividend yield	2.6 %	1.8 %	1.3 %
Volatility	32.5 %	32.3 %	35.0 %
Expected term (in years)	4.0	4.0	3.8

The risk-free interest rate was derived from the average U.S. Treasury Strips rate, which approximated the rate in effect appropriate for the term at the time of grant.

The dividend yield was based on the historical and expected dividend payouts as of the respective award grant dates.

The volatility was based on our own historical stock price volatility over the period commensurate with the expected life of the awards and the implied volatility of a 180-day call option on our own common stock measured at a specific date.

The expected term was commensurate with the awards’ contractual terms.

Table of Contents

Restricted Stock Unit Awards

A summary of time- and market-based RSU activity is as follows:

	Number of RSUs Outstanding	Weighted-Average Grant Date Fair Value Per Share
	(In millions, except per share data)	
Balance as of November 1, 2015	5	$ 95.17
Assumed in Broadcom Merger	6	$ 135.58
Granted	12	$ 138.45
Vested	(4)	$ 114.49
Forfeited	(2)	$ 130.30
Balance as of October 30, 2016	17	$ 130.71
Granted	8	$ 199.33
Vested	(5)	$ 126.81
Forfeited	(2)	$ 142.78
Balance as of October 29, 2017	18	$ 163.42
Granted	7	$ 239.48
Vested	(6)	$ 155.78
Forfeited	(1)	$ 175.46
Balance as of November 4, 2018	18	$ 195.50

The aggregate fair value of time- and market-based RSUs that vested in fiscal years 2018, 2017 and 2016 was $1,516 million, $1,172 million and $590 million, respectively, which represents the market value of our common stock on the date that the RSUs vested. The number of RSUs vested included shares of common stock that we withheld for settlement of employees' tax withholding obligations due upon the vesting of RSUs.

Stock Option Awards

A summary of time- and market-based stock option activity is as follows:

	Number of Options Outstanding	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Life (In years)	Aggregate Intrinsic Value
	(In millions, except years and per share data)			
Balance as of November 1, 2015	21	$ 47.92		
Exercised	(5)	$ 44.35		$ 579
Cancelled	(1)	$ 53.56		
Balance as of October 30, 2016	15	$ 48.77		
Exercised	(4)	$ 45.48		$ 682
Cancelled	(1)	$ 66.08		
Balance as of October 29, 2017	10	$ 49.54		
Exercised	(2)	$ 47.41		$ 534
Cancelled	— *	$ 72.37		
Balance as of November 4, 2018	8	$ 50.14	1.96	$ 1,316

Fully vested as of November 4, 2018	8	$	49.97	1.95	$	1,313
Fully vested and expected to vest as of November 4, 2018	8	$	50.14	1.96	$	1,316

* Represents fewer than 0.5 million shares.

10. Income Taxes

Components of Income (Loss) from Continuing Operations Before Income Taxes

As a result of the Redomiciliation Transaction on April 4, 2018, the following references to domestic activities represent the U.S. for fiscal year 2018 and Singapore for fiscal years 2017 and 2016, respectively. The following table presents the components of income (loss) from continuing operations before income taxes for financial reporting purposes:

	Fiscal Year		
	2018	2017	2016
		(In millions)	
Domestic income (loss)	$ (705)	$ 2,102	$ 1,365
Foreign income (loss)	5,250	(277)	(2,472)
Income (loss) from continuing operations before income taxes	$ 4,545	$ 1,825	$ (1,107)

Components of Provision for (Benefit from) Income Taxes

The benefit from income taxes in fiscal year 2018 was primarily due to income tax benefits recognized from the enactment of the 2017 Tax Reform Act and the Redomiciliation Transaction. The 2017 Tax Reform Act makes significant changes to the U.S. Internal Revenue Code, including, but not limited to, a decrease in the U.S. corporate tax rate from 35% to 21% effective for tax years beginning after December 31, 2017, the transition of U.S. international taxation from a worldwide tax system to a participation exemption regime, and the transition tax on the mandatory deemed repatriation of accumulated non-U.S. earnings of U.S. controlled foreign corporations, or the Transition Tax.

On December 22, 2017, the SEC issued Staff Accounting Bulletin No. 118, or SAB 118, to address the application of GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the 2017 Tax Reform Act. The benefit from income taxes below for fiscal year 2018 represents reasonable estimates of the effects of the 2017 Tax Reform Act for which our analysis is not yet complete. As we complete our analysis of the 2017 Tax Reform Act, including collecting, preparing, and analyzing necessary information, performing and refining calculations, and obtaining additional guidance from standard setting and regulatory bodies on the 2017 Tax Reform Act, we may record adjustments to our benefit from income taxes, which may be material. In accordance with SAB 118, our accounting for the tax effects of the 2017 Tax Reform Act will be completed during the measurement period, which should not extend beyond one year from the enactment date. At November 4, 2018, there were no provisions for which we were unable to record a reasonable estimate of the impact. However, all income tax effects are provisional, including accounting for global intangible low tax income and foreign derived intangible income deductions, in addition to those effects discussed below.

As a result of the 2017 Tax Reform Act, we recorded a total provisional benefit of $7,278 million. This provisional benefit included $7,212 million related to the Transition Tax, which was primarily due to a reduction of $10,457 million in our federal deferred income tax liabilities on accumulated non-U.S. earnings, partially offset by $2,133 million of federal provisional long-term Transaction Tax payable and $1,112 million of unrecognized federal tax benefits related to the Transition Tax. The provisional benefit also included $66 million related to the remeasurement of certain deferred tax assets and liabilities, which were based on the tax rates at which they were expected to be reversed in the future as a result of the 2017 Tax Reform Act.

Additionally, in connection with the Brocade Merger, we established $846 million of net deferred tax liabilities on the excess of book basis over the tax basis of acquired identified intangible assets and investments in certain foreign subsidiaries that have not been indefinitely reinvested, partially offset by acquired tax attributes. We also recognized discrete benefits from the recognition of $181 million of excess tax benefits from stock-based awards that were vested or exercised during fiscal year 2018.

The impact of the Redomiciliation Transaction and the related internal reorganizations included tax benefits of $1,162 million from the remeasurement of withholding taxes on undistributed earnings, partially offset by a $167 million tax provision on foreign earnings and profits subject to U.S. tax.

The income tax provision for fiscal year 2017 was primarily due to profit before tax and a discrete expense of $76 million resulting from entity reorganizations partially offset by the recognition of $273 million of excess tax benefits from stock-based awards that vested or were exercised during fiscal year 2017 and, to a lesser extent, the recognition of previously unrecognized tax benefits primarily as a result of audit settlements.

The income tax provision for fiscal year 2016 was primarily the result of tax associated with our undistributed earnings, partially offset by income tax benefits from losses from continuing operations and the recognition of previously unrecognized tax benefits as a result of audit settlements.

In addition, we obtained several tax incentives from the Singapore Economic Development Board, an agency of the Government of Singapore, which provide that qualifying income earned in Singapore is subject to tax incentive or reduced rates of Singapore income tax. Each tax incentive was separate and distinct from the others, and may be granted, withheld, extended, modified, truncated, complied with or terminated independently without any effect on the other incentives. During fiscal year 2018, one of our tax incentives was no longer in effect due to reorganizations made in connection with the Redomiciliation Transaction. Subject to our compliance with the conditions specified in these incentives and legislative developments, the remaining Singapore tax incentive is presently expected to expire in fiscal year 2020, subject in certain cases to potential extensions, which we may or may not be able to obtain.

We also obtained a tax holiday on our qualifying income in Malaysia, which is scheduled to expire in fiscal year 2028. The tax holiday that we negotiated in Malaysia is also subject to our compliance with various operating and other conditions. If we cannot, or elect not to, comply with the conditions specified, we will lose the related tax benefits and we could be required to refund previously realized material tax benefits.

The effect of these tax incentives and tax holiday was to increase the benefit from income taxes by approximately $590 million and increase diluted net income per share by $1.37 for fiscal year 2018. For fiscal years 2017 and 2016, the effect of these tax incentives and tax holiday, in the aggregate, was to reduce the overall provision for income taxes by approximately $237 million and $169 million, respectively, increase diluted net income per share by $0.56 for fiscal year 2017, and reduce diluted net loss per share by $0.44 for fiscal year 2016.

Significant components of the provision for (benefit from) income taxes are as follows:

	Fiscal Year		
	2018	2017	2016
		(In millions)	
Current tax expense:			
Domestic	$ 293	$ 112	$ 59
Foreign	171	158	165
	464	270	224
Deferred tax expense (benefit):			
Domestic	(8,769)	(1)	9
Foreign	221	(234)	409
	(8,548)	(235)	418
Total provision for (benefit from) income taxes	$ (8,084)	$ 35	$ 642

Rate Reconciliation

	Fiscal Year		
	2018	2017	2016
Statutory tax rate	21.0 %	17.0 %	17.0 %
2017 Tax reform	(160.1)	—	—
Withholding tax	(25.6)	—	—
Foreign income taxed at different rates	(16.3)	(0.8)	(89.7)
Excess tax benefits from stock-based compensation	(4.0)	—	—
Research and development credit	(2.9)	—	—

Deemed inclusion of foreign earnings	4.7	—	—
Tax holidays and concessions	—	(13.0)	15.3
Other, net	5.3	(1.3)	(0.6)
Actual tax rate on income (loss) before income taxes	(177.9)%	1.9 %	(58.0)%

Summary of Deferred Income Taxes

	November 4, 2018	October 29, 2017
	(In millions)	
Deferred income tax assets:		
Depreciation and amortization	$ 7	$ 8
Employee benefits	119	145
Employee stock awards	159	180
Net operating loss carryovers and credit carryovers	1,421	2,356
Other deferred income tax assets	100	70
Gross deferred income tax assets	1,806	2,759
Less valuation allowance	(1,347)	(1,447)
Deferred income tax assets	459	1,312
Deferred income tax liabilities:		
Depreciation and amortization	316	96
Other deferred income tax liabilities	12	12
Foreign earnings not indefinitely reinvested	16	11,202
Deferred income tax liabilities	344	11,310
Net deferred income tax assets (liabilities)	$ 115	$ (9,998)

Deferred income taxes reflect the net effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their basis for income tax purposes and the tax effects of net operating losses and tax credit carryforwards. The decrease in foreign earnings not indefinitely reinvested results from the 2017 Tax Reform Act and the Redomiciliation Transaction.

The following table presents net deferred income tax assets (liabilities) as reflected on the consolidated balance sheets:

	November 4, 2018	October 29, 2017
	(In millions)	
Other long-term assets	$ 284	$ 21
Other long-term liabilities	(169)	(10,019)
Net long-term income tax assets (liabilities)	$ 115	$ (9,998)

The decrease in the valuation allowance from $1,447 million in fiscal year 2017 to $1,347 million in fiscal year 2018 was primarily due to restructuring activities, offset by increases due to the Brocade Merger, foreign deferred tax assets arising from foreign credits, and losses not expected to be realized.

As of November 4, 2018, we had U.S. federal net operating loss carryforwards of $120 million, U.S. state net operating loss carryforwards of $2,434 million and other foreign net operating loss carryforwards of $884 million. U.S. federal and state net operating loss carryforwards begin to expire in fiscal year 2019. The other foreign net operating losses expire in various fiscal years beginning 2019. As of November 4, 2018, we had $349 million and $1,532 million of U.S. federal and state research and development tax credits, respectively, which if not utilized, begin to expire in fiscal year 2019.

The U.S. Tax Reform Act of 1986 limits the use of net operating loss and tax credit carryforwards in the case of an “ownership change” of a corporation or separate return loss year limitations. Any ownership changes, as defined, may restrict utilization of carryforwards. As of November 4, 2018, we had approximately $120 million and $349 million of federal net operating loss and tax credit carryforwards, respectively, in the U.S. subject to an annual limitation. We do not expect these limitations to result in any permanent loss of our tax benefits.

Uncertain Tax Positions

Gross unrecognized tax benefits increased by $1,774 million during fiscal year 2018, resulting in gross unrecognized tax benefits of $4,030 million as of November 4, 2018. The increase in gross unrecognized tax benefits was primarily due to the recognition of uncertain tax positions of $1,112 million related to the Transition Tax, offset by a reduction of our federal deferred income tax liabilities on accumulated non-U.S. earnings. The increase in gross unrecognized tax benefits was also due to the Redomiciliation Transaction, and to a lesser extent, the Brocade Merger.

Gross unrecognized tax benefits increased by $273 million during fiscal year 2017, resulting in gross unrecognized tax benefits of $2,256 million as of October 29, 2017. The increase in gross unrecognized tax benefits was primarily a result of restructuring activities in fiscal year 2017. During fiscal year 2017, we recognized $121 million of previously unrecognized tax benefits as a result of the audit settlement with taxing authorities, and $12 million as a result of the expiration of the statute of limitations for certain audit periods.

Gross unrecognized tax benefits increased by $1,405 million during fiscal year 2016, resulting in gross unrecognized tax benefits of $1,983 million as of October 30, 2016. The increase in gross unrecognized tax benefits was primarily a result of the Broadcom Merger in fiscal year 2016.

We recognize interest and penalties related to unrecognized tax benefits within provision for income taxes in the accompanying consolidated statements of operations. We recognized approximately $59 million of expense related to interest and penalties in fiscal year 2018. Accrued interest and penalties were included within other long-term liabilities on the consolidated balance sheets. As of November 4, 2018 and October 29, 2017, the combined amount of cumulative accrued interest and penalties was approximately $190 million and $132 million, respectively. The increase in cumulative accrued interest and penalties was primarily a result of an increase in interest accrual from various unrecognized tax benefit items.

The following table reconciles the beginning and ending balance of gross unrecognized tax benefits:

	Fiscal Year		
	2018	2017	2016
	(In millions)		
Beginning balance	$ 2,256	$ 1,983	$ 578
Lapse of statute of limitations	(20)	(12)	(8)
Increases in balances related to tax positions taken during prior periods (including those related to acquisitions made during the year)	361	47	1,325
Decreases in balances related to tax positions taken during prior periods	(289)	(32)	(1)
Increases in balances related to tax positions taken during current period	1,726	391	138
Decreases in balances related to settlement with taxing authorities	(4)	(121)	(49)
Ending balance	$ 4,030	$ 2,256	$ 1,983

A portion of our unrecognized tax benefits will affect our effective tax rate if they are recognized upon favorable resolution of the uncertain tax positions. As of November 4, 2018, approximately $4,220 million of the unrecognized tax benefits including accrued interest and penalties would affect our effective tax rate. As of October 29, 2017, approximately $2,388 million of the unrecognized tax benefits including accrued interest and penalties would have affected our effective tax rate.

We are subject to U.S. income tax examination for fiscal years 2010 and later. Certain of our acquired companies are subject to tax examinations in major jurisdictions outside of the U.S. for fiscal years 2012 and later. It is possible that we may recognize up to $468 million of our existing unrecognized tax benefits within the next 12 months as a result of lapses of the statute of limitations for certain audit periods and/or audit examinations expected to be completed within the next 12 months.

11. Segment Information

Reportable Segments

We have four reportable segments: wired infrastructure, wireless communications, enterprise storage and industrial & other. These segments align with our principal target markets. The segments represent components for which separate financial information is available that is utilized on a regular basis by the Chief Executive Officer of Broadcom, who has been identified as the Chief Operating Decision Maker, or the CODM, as defined by authoritative guidance on segment reporting, in determining how to allocate resources and evaluate performance. The segments are determined based on several factors, including client base, homogeneity of products, technology, delivery channels and similar economic characteristics.

Our CODM assesses the performance of each segment and allocates resources to those segments based on net revenue and operating results and does not evaluate our segments using discrete asset information. Operating results by segment include items that are directly attributable to each segment. Operating results by segment also include shared expenses such as global operations, including manufacturing support, logistics and quality control, in addition to expenses associated with selling, general and administrative activities for the business, which are allocated primarily based on revenue, while facilities expenses are primarily allocated based on site-specific headcount.

Unallocated Expenses

Unallocated expenses include amortization of acquisition-related intangible assets, stock-based compensation expense, restructuring, impairment and disposal charges, acquisition-related costs, charges related to inventory step-up to fair value, litigation settlement charges, and other costs, which are not used in evaluating the results of, or in allocating resources to, our segments. Acquisition-related costs also include transaction costs and any costs directly related to the acquisition and integration of acquired businesses.

Depreciation expense directly attributable to each reportable segment is included in operating results for each segment. However, the CODM does not evaluate depreciation expense by operating segment and, therefore, it is not separately presented. There was no inter-segment revenue. The accounting policies of the segments are the same as those described in the summary of significant accounting policies.

	Fiscal Year		
	2018	2017	2016
	(In millions)		
Net revenue:			
Wired infrastructure	$ 8,674	$ 8,549	$ 6,582
Wireless communications	6,490	5,404	3,724
Enterprise storage	4,673	2,799	2,291
Industrial & other	1,011	884	643
Total net revenue	$ 20,848	$ 17,636	$ 13,240
Operating income (loss):			
Wired infrastructure	$ 4,093	$ 3,853	$ 2,664
Wireless communications	2,840	2,155	1,282
Enterprise storage	2,906	1,527	995
Industrial & other	571	447	327
Unallocated expenses	(5,275)	(5,599)	(5,677)
Total operating income (loss)	$ 5,135	$ 2,383	$ (409)

The following tables present net revenue and long-lived asset information based on geographic region. Net revenue is based on the geographic location of the distributors, OEMs or contract manufacturers who purchased our products, which may differ from the geographic location of the end customers. Long-lived assets include property, plant and equipment and are based on the physical location of the assets.

	Fiscal Year		
	2018	2017	2016
	(In millions)		
Net revenue:			
China	$ 10,305	$ 9,460	$ 7,184
United States	2,697	1,266	1,124
Other	7,846	6,910	4,932

	$ 20,848	$ 17,636	$ 13,240

	November 4, 2018	October 29, 2017
	(In millions)	
Long-lived assets:		
United States	$ 1,859	$ 1,822
Taiwan	264	268
Other	512	509
	$ 2,635	$ 2,599

Significant Customer Information

We sell our products through our direct sales force and a select network of distributors globally. Two direct customers accounted for 20% and 14% of our net accounts receivable balance at November 4, 2018 compared with one direct customer which accounted for 17% of our net accounts receivable balance at October 29, 2017. During fiscal year 2018, no direct customers represented more than 10% of our net revenue. During fiscal years 2017 and 2016, one direct customer represented 14% of our net revenue in each period. The majority of the revenue from this customer was included in our wireless communications and wired infrastructure segments. This customer is a contract manufacturer for a number of OEMs.

12. Related Party Transactions

Silicon Manufacturing Partners Pte. Ltd.

We have a 51% equity interest in Silicon Manufacturing Partners Pte. Ltd., or SMP, a joint venture with GlobalFoundries. We have a take-or-pay agreement with SMP under which we have agreed to purchase 51% of the managed wafer capacity from SMP's integrated circuit manufacturing facility and GlobalFoundries has agreed to purchase the remaining managed wafer capacity. SMP determines its managed wafer capacity each year based on forecasts provided by us and GlobalFoundries. If we fail to purchase our required commitments, we will be required to pay SMP for the fixed costs associated with the unpurchased wafers. GlobalFoundries is similarly obligated with respect to the wafers allotted to it. The agreement may be terminated by either party upon two years written notice. The agreement may also be terminated for material breach, bankruptcy or insolvency. We purchased $66 million, $59 million and $41 million of inventory from SMP for fiscal years 2018, 2017 and 2016, respectively. As of November 4, 2018, the amount payable to SMP was $11 million.

During fiscal years 2018, 2017 and 2016, in the ordinary course of business, we purchased from, or sold to, entities of which one of our directors also serves or served as a director, or entities that are otherwise affiliated with one of our directors.

	Fiscal Year		
	2018	2017	2016
		(In millions)	
Total net revenue	$ 664	$ 346	$ 335
Total costs and expenses including inventory purchases	$ 109	$ 145	$ 81

	November 4, 2018	October 29, 2017
	(In millions)	

Total receivables	$ —	$ 31
Total payables	$ 11	$ 12

13. Commitments and Contingencies

Commitments

The following table summarizes contractual obligations and commitments as of November 4, 2018:

	Total	Fiscal Year 2019	2020	2021	2022	2023	Thereafter
	(In millions)						
Debt principal and interest	$ 20,941	$ 566	$ 3,321	$ 1,242	$ 3,940	$ 1,366	$ 10,506
Purchase commitments	852	776	74	1	1	—	—
Other contractual commitments	175	105	63	5	2	—	—
Operating lease obligations	650	75	62	51	39	36	387
Total	$ 22,618	$ 1,522	$ 3,520	$ 1,299	$ 3,982	$ 1,402	$ 10,893

Debt Principal and Interest. Represents principal and interest on borrowings under the 2017 Senior Notes, the Assumed BRCM Senior Notes, and the Assumed Brocade Convertible Notes.

Purchase Commitments. Represents unconditional purchase obligations that include agreements to purchase goods or services, primarily inventory, that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable price provisions, and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty. Cancellation for outstanding purchase orders for capital expenditures in connection with internal fabrication facility expansion and construction of our new campuses is generally allowed but requires payment of all costs incurred through the date of cancellation and, therefore, cancelable purchase orders for these capital expenditures are included in the table above.

Other Contractual Commitments. Represents amounts payable pursuant to agreements related to information technology, human resources, financial infrastructure outsourcing services and other service agreements.

Operating Lease Obligations. Represents real property and equipment leased from third parties under non-cancelable operating leases. Rent expense was $233 million, $253 million and $229 million for fiscal years 2018, 2017 and 2016, respectively.

Due to the inherent uncertainty with respect to the timing of future cash outflows associated with our unrecognized tax benefits at November 4, 2018, we are unable to reliably estimate the timing of cash settlement with the respective taxing authority. Therefore, $3,088 million of unrecognized tax benefits and accrued interest classified within other long-term liabilities on our consolidated balance sheet as of November 4, 2018 have been excluded from the contractual obligations table above.

Standby Letters of Credit

As of each November 4, 2018 and October 29, 2017, we had outstanding obligations relating to standby letters of credit of $14 million and $12 million, respectively. Standby letters of credit are financial guarantees provided by third parties for leases, customs, taxes and certain self-insured risks. If the guarantees are called, we must reimburse the provider of the guarantees. The fair values of the letters of credit approximate the contract amounts. The standby letters of credit generally renew annually.

Contingencies

From time to time, we are involved in litigation that we believe is of the type common to companies engaged in our line of business, including commercial disputes, employment issues and disputes involving claims by third parties that our activities infringe their patent, copyright, trademark or other intellectual property rights. Legal proceedings are often complex, may require the expenditure of significant funds and other resources, and the outcome of litigation is inherently uncertain, with material adverse outcomes possible. Intellectual property claims generally involve the demand by a third-party that we cease the manufacture, use or sale of the allegedly infringing products, processes or technologies and/or pay substantial damages or royalties for past, present and future use of the allegedly infringing intellectual property. Claims that our products or processes infringe or misappropriate any third-party intellectual property rights (including claims arising through our contractual indemnification of our customers) often involve highly complex, technical issues, the outcome of which is inherently uncertain. Moreover, from time to time, we pursue litigation to assert our intellectual property rights. Regardless of the merit or resolution of any such litigation, complex intellectual property litigation is generally costly and diverts the efforts and attention of our management and technical personnel.

Lawsuits Relating to the Acquisition of CA, Inc.

On August 3, 2018, a purported stockholder of CA commenced a putative class action lawsuit captioned *Harvey v. CA, Inc., et al.* against CA, the CA board of directors, Broadcom and Broadcom's wholly owned subsidiary party to the merger agreement with CA in the United States District Court for the Southern District of New York. On August 9, 2018, another putative class action lawsuit captioned *Vladimir Gusinsky Rev. Trust v. CA, Inc., et al.* was filed against CA and the CA board of directors in the United States District Court for the District of Delaware, or Delaware District Court. On August 15, 2018, a third putative class action lawsuit captioned *Jacob Scheiner Retirement Account v. CA, Inc., et al.* was filed against CA and the CA board of directors in the Delaware District Court. On August 22, 2018, a fourth putative class action lawsuit captioned *Kenneth Gilley v. CA, Inc., et al.* was filed against CA and the CA board of directors in the Delaware District Court. The *Harvey* and *Vladimir Gusinsky Rev. Trust* complaints alleged violations of Sections 14(a) and 20(a) of the Exchange Act arising out of CA's preliminary proxy statement relating to the CA Merger, filed with the SEC on July 24, 2018. The *Scheiner Retirement Account* and *Gilley* complaints alleged violations of Sections 14(a) and 20(a) of the Exchange Act and Rule 14a-9 promulgated thereunder arising out of CA's definitive proxy statement relating to the CA Merger, filed with the SEC on August 10, 2018. The complaints asserted that the preliminary proxy statement or definitive proxy statement, as applicable, contain incomplete and misleading information regarding CA's financial projections and the financial analysis performed by Qatalyst Partners, CA's financial advisor, as well as, for the *Harvey, Scheiner Retirement Account* and *Gilley* complaints, the sales process undertaken by CA in connection with its proposed merger with Broadcom. Plaintiffs sought to enjoin the defendants from consummating the CA Merger, or, if the CA Merger is consummated, rescission and/or damages. The plaintiffs also sought costs and fees. On September 4, 2018, the parties to each of the four lawsuits reached an agreement in principle providing for a dismissal of each of the lawsuits following the CA shareholder vote with respect to the CA Merger. In connection with this agreement, CA filed a supplement to the definitive proxy statement relating to the CA Merger. On September, 24, 2018, all four lawsuits were dismissed.

Lawsuits Relating to the Acquisition of Brocade Communications Systems, Inc.

On December 13, 2016, December 15, 2016, December 21, 2016, January 5, 2017 and January 18, 2017, six putative class action complaints were filed in the United States District Court for the Northern District of California, or the U.S. Northern District Court, captioned Steinberg v. Brocade Communications Systems, Inc., et al., No. 3:16-cv-7081-EMC, Gross v. Brocade Communications Systems, Inc., et al., No. 3:16-cv-7173-EJD, Jha v. Brocade Communications Systems, Inc., et al., No. 3:16-cv-7270-HRL, Bragan v. Brocade Communications Systems, Inc., et al., No. 3:16-cv-7271-JSD, Chuakay v. Brocade Communications Systems, Inc., et al., No. 3:17-cv-0058-PJH, and Mathew v. Brocade Communications Systems, Inc., et al., No. 3:16-cv-7271-HSG, respectively. The Steinberg, Bragan and Mathew complaints named as defendants Brocade, the members of Brocade's board of directors, Broadcom, BRCM and Bobcat Merger Sub, Inc. The Gross, Jha and Chuakay complaints named as defendants Brocade and the members of Brocade's board of directors. All of the complaints asserted claims under Sections 14(a) and 20(a) of the Exchange Act and Rule 14a-9 promulgated thereunder. The complaints alleged, among other things, that the board of directors of Brocade failed to provide material information and/or omitted material information from the Preliminary Proxy Statement filed with the SEC on December 6, 2016 by Brocade. The complaints sought to enjoin the closing of the transaction between Brocade and Broadcom, as well as certain other equitable and declaratory relief and attorneys' fees and costs. On January 10, 2017, January 27, 2017 and February 15, 2017, the U.S. Northern District Court granted motions to relate the cases, all of which were then related to the Steinberg action and before the Honorable Judge Edward Chen. On January 11, 2017, Plaintiff Jha filed a motion for a preliminary injunction, which was subsequently withdrawn on January 18, 2017. On February 6, 2017, Plaintiff Gross voluntarily dismissed the Gross action without prejudice, which was ordered by the U.S.

Northern District Court on February 15, 2017. On April 14, 2017, the U.S. Northern District Court granted the Motion for Consolidation, Appointment as Lead Plaintiff and Approval of Lead Plaintiff's Selection of Counsel filed by Plaintiff Giulio D. Cessario, a plaintiff in the Steinberg action, which consolidated these actions under the caption In re Brocade Communications Systems, Inc. Securities Litigation, Case No. 3:16-cv-07081-EMC. On December 29, 2017, Lead Plaintiff voluntarily dismissed the consolidated action without prejudice and withdrew as Lead Plaintiff. On February 16, 2018, Plaintiffs Gross, Chuakay and Jha filed a joint motion for an award of attorneys' fees. On March 2, 2018, the defendants filed a joint opposition to the motion for attorneys' fees. On May 3, 2018, Plaintiffs Gross, Chuakay and Jha withdrew their motion for an award of attorneys' fees. As of May 6, 2018, all actions have been dismissed and motions withdrawn, thereby concluding all actions with respect to these lawsuits.

Lawsuits Relating to Tessera, Inc.

On May 23, 2016, Tessera Technologies, Inc., Tessera, Inc., or Tessera, and Invensas Corp., an affiliate of Tessera, or Invensas or collectively, the Complainants, filed a complaint to institute an investigation with the U.S. International Trade Commission, or the ITC. The Complainants alleged infringement by Broadcom and our subsidiaries, BRCM, Avago, and Avago Technologies U.S. Inc., or Avago U.S., or collectively, the Respondents, of three patents relating to semiconductor packaging and semiconductor manufacturing technology. The downstream respondents, which are customers of the Respondents, were Arista Networks, Inc., ARRIS International plc, ARRIS Group, Inc., ARRIS Technology, Inc., ARRIS Enterprises LLC, ARRIS

Solutions, Inc., Pace Ltd., Pace Americas, LLC, Pace USA, LLC, ASUSteK Computer Inc., ASUS Computer International, Comcast Cable Communications, LLC, Comcast Cable Communications Management, LLC, Comcast Business Communications, LLC, HTC Corporation, HTC America, Inc., NETGEAR, Inc., Technicolor S.A., Technicolor USA, Inc., and Technicolor Connected Home USA LLC, or collectively, the Downstream Respondents. On July 20, 2016, the ITC instituted the investigation, or the ITC Investigation. Complainants sought the following relief: (1) a permanent limited exclusion order excluding from importation into the U.S. all of the Respondents' semiconductor devices and semiconductor device packages and Downstream Respondents' products containing Respondents' semiconductor devices and semiconductor device packages that infringe one or more of the three patents subject to the ITC Investigation and (2) a permanent cease and desist order prohibiting the Respondents and Downstream Respondents and related companies from importing, marketing, advertising, demonstrating, warehousing inventory for distribution, offering for sale, selling, qualifying for use in the products of others, distributing, or using the Respondents' semiconductor devices and semiconductor device packages and Downstream Respondents' products containing Respondents' semiconductor devices and semiconductor device packages that infringe one or more of the three patents subject to the ITC Investigation.

On May 23, 2016, Tessera and Invensas filed a complaint against BRCM in the U.S. District Court for the District of Delaware, Case No. 1-16-cv-00379, alleging infringement of the three patents subject to the ITC Investigation. The complaint sought compensatory damages in an unspecified amount, as well as an award of reasonable attorneys' fees, interest, and costs.

On May 23, 2016, Tessera and Tessera Advanced Technologies, Inc. filed a complaint against BRCM in the U.S. District Court for the District of Delaware, Case No. 1-16-cv-00380, alleging infringement of four patents relating to semiconductor packaging and circuit technologies. On June 19, 2016, the complaint was amended to add three more patents relating to semiconductor packaging technologies for a total of seven patents in this matter. The complaint sought compensatory damages in an unspecified amount, as well as an award of reasonable attorneys' fees, interest, and costs.

On May 23, 2016, Invensas filed a Writ of Summons against Broadcom, BRCM, Broadcom Netherlands B.V. and Broadcom Communications Netherlands B.V. in the Hague District Court in the Netherlands, Case No. L1422381, alleging infringement of a single European patent that is a foreign counterpart to one of the patents subject to the ITC Investigation, or the European Patent. The named defendants also included distributors EBV Elektronik GmbH, Arrow Central Europe GmbH, and Mouser Electronics Netherlands B.V. The requested relief included a cease-and-desist order and damages in an unspecified amount.

On May 23, 2016, Invensas also filed a complaint against each of (i) Broadcom Germany GmbH and Broadcom's German distributors, Case No. 7 O 97/16, and (ii) Broadcom and BRCM, Case No. 7 O 98/16, in the Mannheim District Court in Germany, alleging infringement of the European Patent. The requested relief included damages in an unspecified amount and an injunction preventing the sale of the accused products.

On November 7, 2016, Invensas filed a complaint against Avago, Avago U.S., Emulex Corporation, or Emulex, LSI and PLX Technology, Inc., a subsidiary of Broadcom, or PLX, in the U.S. District Court for the District of Delaware, Case No. 1-16-cv-01033, alleging infringement of two of the patents subject to the ITC Investigation. The complaint sought compensatory damages in an unspecified amount, as well as an award of reasonable attorneys' fees, interest, and costs.

On November 7, 2016, Tessera and Invensas filed a complaint against Avago, Avago U.S., and Avago Technologies Wireless (U.S.A.) Manufacturing Inc., or AT Wireless in the U.S. District Court for the District of Delaware, Case No. 1-16-cv-01034, alleging infringement of two patents relating to semiconductor packaging technology. On January 31, 2017, Tessera and Invensas amended the complaint in this matter and added three additional patents related to semiconductor packaging technology, which were also at issue in case No. 1-16-cv-00379 pending in Delaware. The complaint sought compensatory damages in an unspecified amount, as well as an award of reasonable attorneys' fees, interest, and costs.

On December 18, 2017, Broadcom and its subsidiaries entered into comprehensive settlement agreements and a patent license agreement with Tessera and its affiliates resolving all outstanding litigation. Pursuant to the agreements between the parties, the ITC investigation was terminated, and all of the other litigations were dismissed, thereby concluding all actions with respect to these matters.

Lawsuits Relating to the Acquisition of Emulex

On March 3, 2015, two putative stockholder class action complaints were filed in the Court of Chancery of the State of Delaware, or the Delaware Court of Chancery, against Emulex, its directors, AT Wireless, and Emerald Merger Sub, Inc., or Emerald Merger Sub, captioned as follows: James Tullman v. Emulex Corporation, et al., Case No. 10743-VCL (Del. Ch.); Moshe Silver ACF/Yehudit Silver U/NY/UTMA v. Emulex Corporation, et al., Case No. 10744-VCL (Del. Ch.). On March 11, 2015, a third complaint was filed in the Delaware Court of Chancery, captioned Hoai Vu v. Emulex Corporation, et al., Case No. 10776-VCL (Del. Ch.). The complaints alleged, among other things, that Emulex's directors breached their fiduciary duties by approving the Agreement and Plan of Merger, dated February 25, 2015, by and among AT Wireless, Emerald Merger Sub and Emulex and that AT Wireless and Emerald Merger Sub aided and abetted these alleged breaches of fiduciary duty. The complaints sought, among other things, either to enjoin the transaction or to rescind it following its completion, as well as damages, including attorneys' and experts' fees. The Delaware Court of Chancery has entered an order consolidating the three Delaware actions under the caption In re Emulex Corporation Stockholder Litigation, Consolidated C.A. No. 10743-VCL. On May 5, 2015, we completed our acquisition of Emulex. On June 5, 2015, the Court of Chancery dismissed the consolidated action without prejudice.

On April 8, 2015, a putative class action complaint was filed in the U.S. Central District Court, entitled Gary Varjabedian, et al. v. Emulex Corporation, et al., No. 8:15-cv-554-CJC-JCG. The complaint names as defendants Emulex, its directors, AT Wireless and Emerald Merger Sub, and purported to assert claims under Sections 14(d), 14(e) and 20(a) of the Exchange Act. The complaint alleged, among other things, that the board of directors of Emulex failed to provide material information and/or omitted material information from the Solicitation/Recommendation Statement on Schedule 14D-9 filed with the SEC on April 7, 2015 by Emulex, together with the exhibits and annexes thereto. The complaint sought to enjoin the tender offer to purchase all of the outstanding shares of Emulex common stock, as well as certain other equitable relief and attorneys' fees and costs. On July 28, 2015, the U.S. Central District Court issued an order appointing the lead plaintiff and approving lead counsel for the putative class. On September 9, 2015, plaintiff filed a first amended complaint seeking rescission of the merger, unspecified money damages, other equitable relief and attorneys' fees and costs. On October 13, 2015, defendants moved to dismiss the first amended complaint, which the U.S. Central District Court granted with prejudice on January 13, 2016. Plaintiff filed a notice of appeal to the United States Court of Appeals for the Ninth Circuit, or the Ninth Circuit Court, on January 15, 2016. The appeal is captioned Gary Varjabedian, et al. v. Emulex Corporation, et al., No. 16-55088. On June 27, 2016, the Plaintiff-Appellant filed his opening brief, on August 17 and August 22, 2016, the Defendants-Appellees filed their answering briefs, and on October 5, 2016 Plaintiff-Appellant filed his reply brief. The Ninth Circuit Court heard oral arguments on October 5, 2017. On April 20, 2018, the Ninth Circuit Court issued an opinion affirming in part and reversing in part the decision of the U.S. Central District Court and remanding Plaintiff-Appellant's claims under Sections 14(e) and 20(a) of the Exchange Act to the U.S. Central District Court for reconsideration. On May 4, 2018, the Defendants-Appellees filed a Petition for Rehearing En Banc with the Ninth Circuit Court. On July 13, 2018, Plaintiff-Appellant filed an Opposition to the Petition for Rehearing En Banc. On September 6, 2018, the Ninth Circuit Court issued an order denying the Petition for Rehearing En Banc. On October 11, 2018, Defendants-Appellees filed a Petition for a Writ of Certiorari to the United States Supreme Court. We believe these claims are all without merit and intend to vigorously defend these actions.

Other Matters

In addition to the matters discussed above, we are currently engaged in a number of legal actions in the ordinary course of our business.

Contingency Assessment

We do not believe, based on currently available facts and circumstances, that the final outcome of any pending legal proceedings, taken individually or as a whole, will have a material adverse effect on our financial condition, results of operations or cash flows. However, lawsuits may involve complex questions of fact and law and may require the expenditure of significant funds and other resources to defend. The results of litigation are inherently uncertain, and material adverse outcomes are possible. From time to time, we may enter into confidential discussions regarding the potential settlement of such lawsuits. Any settlement of pending litigation could require us to incur substantial costs and other ongoing expenses, such as future royalty payments in the case of an intellectual property dispute.

During the periods presented, no material amounts have been accrued or disclosed in the accompanying consolidated financial statements with respect to loss contingencies associated with any other legal proceedings, as potential losses for such matters are not considered probable and ranges of losses are not reasonably estimable. These matters are subject to many uncertainties and the ultimate outcomes are not predictable. There can be no assurances that the actual amounts required to satisfy any liabilities arising from the matters described above will not have a material adverse effect on our results of operations, financial position or cash flows.

Other Indemnifications

As is customary in our industry and as provided for in local law in the U.S. and other jurisdictions, many of our standard contracts provide remedies to our customers and others with whom we enter into contracts, such as defense, settlement, or payment of judgment for intellectual property claims related to the use of our products. From time to time, we indemnify customers, as well as our suppliers, contractors, lessors, lessees, companies that purchase our businesses or assets and others with whom we enter into contracts, against combinations of loss, expense, or liability arising from various triggering events related to the sale and the use of our products, the use of their goods and services, the use of facilities and state of our owned facilities, the state of the assets and businesses that we sell and other matters covered by such contracts, usually up to a specified maximum amount. In addition, from time to time we also provide protection to these parties against claims related to undiscovered liabilities, additional product liabilities or environmental obligations. In our experience, claims made under such indemnifications are rare and the associated estimated fair value of the liability is not material.

Table of Contents

14. Restructuring, Impairment and Disposal Charges

Restructuring Charges

The following is a summary of significant restructuring expense recognized in continuing operations, primarily in operating expenses:

- During fiscal year 2018, we initiated cost reduction activities associated with the Brocade Merger. As a result, we recognized $176 million of restructuring expense primarily related to employee termination costs. Approximately 1,200 employees were terminated from our workforce across all business and functional areas on a global basis as a result of the Brocade Merger during fiscal year 2018.

- During fiscal year 2016, we initiated cost reduction activities associated with the acquisition of BRCM. As a result, we recognized $50 million, $124 million and $447 million of restructuring expense in fiscal years 2018, 2017, and 2016 respectively. These restructuring expenses primarily related to lease and other exit costs for fiscal year 2018 and employee termination costs for fiscal years 2017 and 2016.

As of November 4, 2018, we have substantially completed the restructuring activities related to the acquisition of BRCM.

	Employee Termination Costs	Lease and Other Exit Costs	Total
		(In millions)	
Balance as of November 2, 2015	$ 13	$ 13	$ 26
Liabilities assumed from BRCM	2	13	15
Restructuring charges	445	37	482
Utilization	(344)	(28)	(372)
Balance as of October 30, 2016	116	35	151
Restructuring charges	86	43	129
Utilization	(174)	(61)	(235)
Balance as of October 29, 2017	28	17	45
Restructuring charges (a)	153	75	228
Utilization	(165)	(86)	(251)
Balance as of November 4, 2018 (b)	$ 16	$ 6	$ 22

(a) Included $2 million, $5 million and $35 million of restructuring charges related to discontinued operations recognized during fiscal years 2018, 2017 and 2016, respectively, which was included in loss from discontinued operations in our consolidated statements of operations.

(b) The majority of the employee termination costs balance is expected to be paid during the first quarter of fiscal year 2019. The leases and other exit costs balance is expected to be paid by the end of fiscal year 2019.

Impairment and Disposal Charges

During fiscal year 2018, impairment and disposal charges of $13 million primarily related to leasehold improvements.

During fiscal year 2017, impairment and disposal charges of $56 million related to property, plant and equipment and IPR&D projects acquired in the BRCM acquisition.

During fiscal year 2016, impairment and disposal charges of $417 million primarily related to IPR&D projects which were abandoned as a result of the BRCM acquisition. In addition, we recorded impairment charges of $173 million primarily for property, plant and equipment and a $16 million loss on disposal of these assets acquired in the BRCM acquisition.

15. Condensed Consolidating Financial Information

The 2017 Senior Notes, which are discussed in further detail in Note 8. "Borrowings", are fully and unconditionally guaranteed, jointly and severally, on an unsecured, unsubordinated basis by the Guarantors, subject to certain release conditions described in the respective Indentures and below.

The guarantee by Broadcom will be automatically and unconditionally released (solely in the case of clauses (1) or (2) below) in the events of (1) sale, exchange, disposition or other transfer of all or substantially all of Guarantors' assets, (2) the Issuers' exercise of their legal defeasance option or covenant defeasance options or if the Issuers' obligations under the indenture are satisfied and discharged or (3) release of obligations under the 2017 Senior Notes. The Parent Guarantor's guarantee may also be released under other circumstances described in the Indentures.

The following information sets forth the condensed consolidating financial information as of November 4, 2018 and October 29, 2017 and for the fiscal years ended November 4, 2018, October 29, 2017 and October 30, 2016 for the Parent Guarantor, Subsidiary Guarantor, Subsidiary Issuers, and non-guarantor subsidiaries. Investments in subsidiaries are accounted for under the equity method; accordingly, entries necessary to consolidate the Parent Guarantor and all of our guarantor and non-guarantor subsidiaries are reflected in the eliminations column. In the opinion of management, separate complete financial statements of the Subsidiary Issuers would not provide additional material information that would be useful in assessing their financial composition.

	Condensed Consolidating Balance Sheet					
	November 4, 2018					
	Parent Guarantor	Subsidiary Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)					
ASSETS						
Current assets:						
Cash and cash equivalents	$ —	$ 6	$ 2,461	$ 1,825	$ —	$ 4,292
Trade accounts receivable, net	—	—	—	3,325	—	3,325
Inventory	—	—	—	1,124	—	1,124
Intercompany receivable	56	40	182	103	(381)	—
Intercompany loan receivable	—	46	9,780	4,667	(14,493)	—
Other current assets	52	—	37	277	—	366
Total current assets	108	92	12,460	11,321	(14,874)	9,107
Long-term assets:						
Property, plant and equipment, net	—	—	772	1,863	—	2,635
Goodwill	—	—	1,360	25,553	—	26,913
Intangible assets, net	—	—	84	10,678	—	10,762
Investment in subsidiaries	35,268	35,271	46,745	35,268	(152,552)	—
Intercompany loan receivable, long-term	—	—	—	991	(991)	—
Other long-term assets	—	—	250	457	—	707
Total assets	$ 35,376	$ 35,363	$ 61,671	$ 86,131	$ (168,417)	$ 50,124
LIABILITIES AND EQUITY						
Current liabilities:						
Accounts payable	$ 19	$ —	$ 44	$ 748	$ —	$ 811
Employee compensation and benefits	—	—	272	443	—	715
Intercompany payable	9	93	58	221	(381)	—
Intercompany loan payable	8,691	—	4,713	1,089	(14,493)	—
Other current liabilities	—	2	219	591	—	812
Total current liabilities	8,719	95	5,306	3,092	(14,874)	2,338
Long-term liabilities:						
Long-term debt	—	—	17,456	37	—	17,493
Deferred tax liabilities	—	—	(47)	216	—	169
Intercompany loan payable, long-term	—	—	991	—	(991)	—

Unrecognized tax benefits	—	—	2,563	525	—	3,088
Other long-term liabilities	—	—	131	248	—	379
Total liabilities	8,719	95	26,400	4,118	(15,865)	23,467
Total Broadcom Inc. stockholders’ equity	26,657	35,268	35,271	82,013	(152,552)	26,657
Total liabilities and equity	$ 35,376	$ 35,363	$ 61,671	$ 86,131	$ (168,417)	$ 50,124

	Condensed Consolidating Balance Sheet October 29, 2017					
	Parent Guarantor	Subsidiary Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)					
ASSETS						
Current assets:						
Cash and cash equivalents	$ —	$ 194	$ 7,555	$ 3,455	$ —	$ 11,204
Trade accounts receivable, net	—	—	—	2,448	—	2,448
Inventory	—	—	—	1,447	—	1,447
Intercompany receivable	—	32	279	309	(620)	—
Intercompany loan receivable	—	28	1,891	8,849	(10,768)	—
Other current assets	—	—	350	374	—	724
Total current assets	—	254	10,075	16,882	(11,388)	15,823
Long-term assets:						
Property, plant and equipment, net	—	—	207	2,392	—	2,599
Goodwill	—	—	1,360	23,346	—	24,706
Intangible assets, net	—	—	—	10,832	—	10,832
Investment in subsidiaries	20,285	23,112	7,709	22,776	(73,882)	—
Intercompany loan receivable, long-term	—	—	41,547	—	(41,547)	—
Other long-term assets	—	—	213	245	—	458
Total assets	$ 20,285	$ 23,366	$ 61,111	$ 76,473	$ (126,817)	$ 54,418
LIABILITIES AND EQUITY						
Current liabilities:						
Accounts payable	$ —	$ 7	$ 72	$ 1,026	$ —	$ 1,105
Employee compensation and benefits	—	—	274	352	—	626
Current portion of long-term debt	—	—	117	—	—	117
Intercompany payable	—	123	186	311	(620)	—
Intercompany loan payable	—	50	8,799	1,919	(10,768)	—
Other current liabilities	—	—	254	427	—	681
Total current liabilities	—	180	9,702	4,035	(11,388)	2,529
Long-term liabilities:						
Long-term debt	—	—	17,431	—	—	17,431
Deferred tax liabilities	—	—	10,293	(274)	—	10,019
Intercompany loan payable, long-term	—	—	—	41,547	(41,547)	—
Unrecognized tax benefits	—	—	497	514	—	1,011
Other long-term liabilities	—	—	76	166	—	242
Total liabilities	—	180	37,999	45,988	(52,935)	31,232
Total Broadcom Inc. stockholders’ equity	20,285	20,285	23,112	30,485	(73,882)	20,285
Noncontrolling interest	—	2,901	—	—	—	2,901
Total liabilities and equity	$ 20,285	$ 23,366	$ 61,111	$ 76,473	$ (126,817)	$ 54,418

	Condensed Consolidating Statements of Operations and Comprehensive Income					
	Fiscal Year Ended					
	November 4, 2018					
	Parent Guarantor	Subsidiary Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)					
Net revenue	$ —	$ —	$ —	$ 20,848	$ —	$ 20,848
Intercompany revenue	—	—	1,924	—	(1,924)	—
Total revenue	—	—	1,924	20,848	(1,924)	20,848
Cost of products sold:						
Cost of products sold	—	—	132	6,889	—	7,021
Intercompany cost of products sold	—	—	—	126	(126)	—
Purchase accounting effect on inventory	—	—	—	70	—	70
Amortization of acquisition-related intangible assets	—	—	—	3,004	—	3,004
Restructuring charges	—	—	1	19	—	20
Total cost of products sold	—	—	133	10,108	(126)	10,115
Gross margin	—	—	1,791	10,740	(1,798)	10,733
Research and development	—	—	1,651	2,117	—	3,768
Intercompany operating expense	—	—	—	1,798	(1,798)	—
Selling, general and administrative	31	80	297	648	—	1,056
Amortization of acquisition-related intangible assets	—	—	—	541	—	541
Restructuring, impairment and disposal charges	—	—	53	166	—	219
Litigation settlements	—	—	14	—	—	14
Total operating expenses	31	80	2,015	5,270	(1,798)	5,598
Operating income (loss)	(31)	(80)	(224)	5,470	—	5,135
Interest expense	—	—	(626)	(2)	—	(628)
Intercompany interest expense	(67)	—	(199)	(1,449)	1,715	—
Impairment on investment	—	—	—	(106)	—	(106)
Other income, net	—	4	88	52	—	144
Intercompany interest income	—	1	1,516	198	(1,715)	—
Intercompany other income (expense), net	111	230	(56)	(285)	—	—
Income from continuing operations before income taxes and earnings in subsidiaries	13	155	499	3,878	—	4,545
Provision for (benefit from) income taxes	44	2	(8,043)	(87)	—	(8,084)
Income (loss) from continuing operations before earnings in subsidiaries	(31)	153	8,542	3,965	—	12,629
Earnings in subsidiaries	12,290	12,654	4,114	14,809	(43,867)	—
Income from continuing operations and earnings in subsidiaries	12,259	12,807	12,656	18,774	(43,867)	12,629
Loss from discontinued operations, net of income taxes	—	—	(2)	(17)	—	(19)
Net income	12,259	12,807	12,654	18,757	(43,867)	12,610
Net income attributable to noncontrolling interest	—	351	—	—	—	351
Net income attributable to common stock	$12,259	$12,456	$12,654	$ 18,757	$(43,867)	$ 12,259
Net income	$12,259	$12,807	$12,654	$ 18,757	$(43,867)	$ 12,610

Other comprehensive loss, net of tax:						
Change in actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	—	—	—	(8)	—	(8)
Other comprehensive loss	—	—	—	(8)	—	(8)
Comprehensive income	12,259	12,807	12,654	18,749	(43,867)	12,602
Comprehensive income attributable to noncontrolling interest	—	351	—	—	—	351
Comprehensive income attributable to common stock	$12,259	$12,456	$12,654	$ 18,749	$(43,867)	$ 12,251

	Condensed Consolidating Statements of Operations and Comprehensive Loss					
	Fiscal Year Ended					
	October 29, 2017					
	Parent Guarantor	Subsidiary Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)					
Net revenue	$ —	$ —	$ 73	$ 17,563	$ —	$ 17,636
Intercompany revenue	—	—	2,046	8	(2,054)	—
Total revenue	—	—	2,119	17,571	(2,054)	17,636
Cost of products sold:						
Cost of products sold	—	—	154	6,439	—	6,593
Intercompany cost of products sold	—	—	(12)	174	(162)	—
Purchase accounting effect on inventory	—	—	—	4	—	4
Amortization of acquisition-related intangible assets	—	—	7	2,504	—	2,511
Restructuring charges	—	—	5	14	—	19
Total cost of products sold	—	—	154	9,135	(162)	9,127
Gross margin	—	—	1,965	8,436	(1,892)	8,509
Research and development	—	—	1,490	1,802	—	3,292
Intercompany operating expense	—	—	(66)	1,958	(1,892)	—
Selling, general and administrative	—	23	339	425	—	787
Amortization of acquisition-related intangible assets	—	—	7	1,757	—	1,764
Restructuring, impairment and disposal charges	—	—	54	107	—	161
Litigation settlements	—	—	—	122	—	122
Total operating expenses	—	23	1,824	6,171	(1,892)	6,126
Operating income (loss)	—	(23)	141	2,265	—	2,383
Interest expense	—	—	(411)	(43)	—	(454)
Intercompany interest expense	—	(12)	(274)	(1,420)	1,706	—
Loss on extinguishment of debt	—	—	(59)	(107)	—	(166)
Other income, net	—	2	30	30	—	62
Intercompany interest income	—	1	1,425	280	(1,706)	—
Intercompany other income (expense), net	—	1,390	(589)	(801)	—	—
Income from continuing operations before income taxes and earnings in subsidiaries	—	1,358	263	204	—	1,825
Provision for (benefit from) income taxes	—	—	67	(32)	—	35
Income from continuing operations before earnings in subsidiaries	—	1,358	196	236	—	1,790
Earnings in subsidiaries	1,692	426	243	4,453	(6,814)	—
Income from continuing operations and earnings in subsidiaries	1,692	1,784	439	4,689	(6,814)	1,790
Income (loss) from discontinued operations, net of income taxes	—	—	(13)	7	—	(6)
Net income	$ 1,692	$ 1,784	$ 426	$ 4,696	$ (6,814)	$ 1,784
Net income attributable to noncontrolling interest	—	92	—	—	—	92
Net income attributable to common stock	$ 1,692	$ 1,692	$ 426	$ 4,696	$ (6,814)	$ 1,692
Net income	$ 1,692	$ 1,784	$ 426	$ 4,696	$ (6,814)	$ 1,784

Other comprehensive income, net of tax:						
Change in actuarial gain and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	—	—	—	43	—	43
Other comprehensive income	—	—	—	43	—	43
Comprehensive income	1,692	1,784	426	4,739	(6,814)	1,827
Comprehensive income attributable to noncontrolling interest	—	92	—	—	—	92
Comprehensive income attributable to common stock	$ 1,692	$ 1,692	$ 426	$ 4,739	$ (6,814)	$ 1,735

	Condensed Consolidating Statements of Operations and Comprehensive Income					
	Fiscal Year Ended					
	October 30, 2016					
	Parent Guarantor	Subsidiary Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)					
Net revenue	$ —	$ —	$ 402	$ 12,838	$ —	$ 13,240
Intercompany revenue	—	—	353	55	(408)	—
Total revenue	—	—	755	12,893	(408)	13,240
Cost of products sold:						
Cost of products sold	—	—	237	5,058	—	5,295
Intercompany cost of products sold	—	—	(149)	557	(408)	—
Purchase accounting effect on inventory	—	—	15	1,170	—	1,185
Amortization of acquisition-related intangible assets	—	—	14	749	—	763
Restructuring charges	—	—	36	21	—	57
Total cost of products sold	—	—	153	7,555	(408)	7,300
Gross margin	—	—	602	5,338	—	5,940
Research and development	—	—	1,237	1,437	—	2,674
Intercompany operating expense	—	—	(1,337)	1,337	—	—
Selling, general and administrative	—	41	254	511	—	806
Amortization of acquisition-related intangible assets	—	—	82	1,791	—	1,873
Restructuring, impairment and disposal charges	—	—	309	687	—	996
Total operating expenses	—	41	545	5,763	—	6,349
Operating income (loss)	—	(41)	57	(425)	—	(409)
Interest expense	—	—	(312)	(273)	—	(585)
Intercompany interest expense	—	(3)	(262)	(3)	268	—
Loss on extinguishment of debt	—	—	(113)	(10)	—	(123)
Other income (expense), net	—	—	(27)	37	—	10
Intercompany interest income	—	1	2	265	(268)	—
Intercompany other income (expense), net	—	753	(277)	(476)	—	—
Income (loss) from continuing operations before income taxes and earnings in subsidiaries	—	710	(932)	(885)	—	(1,107)
Provision for income taxes	—	—	447	195	—	642
Income (loss) from continuing operations before loss from subsidiaries	—	710	(1,379)	(1,080)	—	(1,749)
Loss from subsidiaries	(1,739)	(2,571)	(1,034)	(2,221)	7,565	—
Loss from continuing operations and loss in subsidiaries	(1,739)	(1,861)	(2,413)	(3,301)	7,565	(1,749)
Income (loss) from discontinued operations, net of income taxes	—	—	(158)	46	—	(112)
Net loss	(1,739)	(1,861)	(2,571)	(3,255)	7,565	(1,861)
Net loss attributable to noncontrolling interest	—	(122)	—	—	—	(122)

Net loss attributable to common stock	$(1,739)	$(1,739)	$(2,571)	$(3,255)	$ 7,565	$ (1,739)
Net loss	$(1,739)	$(1,861)	$(2,571)	$(3,255)	$ 7,565	$ (1,861)
Other comprehensive loss, net of tax:						
Change in actuarial loss and prior service costs associated with defined benefit pension plans and post-retirement benefit plans	—	—	—	(61)	—	(61)
Other comprehensive loss	—	—	—	(61)	—	(61)
Comprehensive loss	(1,739)	(1,861)	(2,571)	(3,316)	7,565	(1,922)
Comprehensive loss attributable to noncontrolling interest	—	(122)	—	—	—	(122)
Comprehensive loss attributable to common stock	$(1,739)	$(1,739)	$(2,571)	$(3,316)	$ 7,565	$ (1,800)

	Condensed Consolidating Statements of Cash Flows					
	Fiscal Year Ended					
	November 4, 2018					
	Parent Guarantor	Subsidiary Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)					
Cash flows from operating activities:						
Net income	$ 12,259	$ 12,807	$ 12,654	$ 18,757	$ (43,867)	$ 12,610
Adjustments to reconcile net income to net cash provided by (used in) operating activities	(12,323)	(12,926)	(12,906)	(9,671)	44,096	(3,730)
Net cash provided by (used in) operating activities	(64)	(119)	(252)	9,086	229	8,880
Cash flows from investing activities:						
Intercompany contributions paid	—	(102)	(9,099)	(3,002)	12,203	—
Distributions received from subsidiaries	—	1,521	—	1,521	(3,042)	—
Net change in intercompany loans	—	(19)	2,637	(164)	(2,454)	—
Acquisitions of businesses, net of cash acquired	—	—	—	(4,800)	—	(4,800)
Proceeds from sales of businesses	—	—	—	773	—	773
Purchases of property, plant and equipment	—	—	(196)	(497)	58	(635)
Proceeds from disposals of property, plant and equipment	—	—	55	242	(58)	239
Purchases of investments	—	—	(50)	(199)	—	(249)
Proceeds from sales and maturities of investments	—	—	54	—	—	54
Other	—	—	(50)	(6)	—	(56)
Net cash provided by (used in) investing activities	—	1,400	(6,649)	(6,132)	6,707	(4,674)
Cash flows from financing activities:						
Intercompany contributions received	—	—	3,231	9,201	(12,432)	—
Dividend and distribution payments	(1,477)	(1,521)	(1,521)	(1,521)	3,042	(2,998)
Net intercompany borrowings	8,690	(50)	261	(11,355)	2,454	—
Repayment of debt	—	—	(117)	(856)	—	(973)
Repurchase of common stock	(7,258)	—	—	—	—	(7,258)
Issuance of common stock, net of shares withheld for employee taxes	109	102	(20)	(35)	—	156
Payment of capital lease obligations	—	—	—	(21)	—	(21)
Other	—	—	(27)	3	—	(24)
Net cash provided by (used in) financing activities	64	(1,469)	1,807	(4,584)	(6,936)	(11,118)
Net change in cash and cash equivalents	—	(188)	(5,094)	(1,630)	—	(6,912)
Cash and cash equivalents at beginning of period	—	194	7,555	3,455	—	11,204
Cash and cash equivalents at end of period	$ —	$ 6	$ 2,461	$ 1,825	$ —	$ 4,292

	Condensed Consolidating Statements of Cash Flows					
	Fiscal Year Ended					
	October 29, 2017					
	Parent Guarantor	Subsidiary Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)					
Cash flows from operating activities:						
Net income	$1,692	$1,784	$ 426	$ 4,696	$(6,814)	$ 1,784
Adjustments to reconcile net income to net cash provided by (used in) operating activities	(1,692)	(1,980)	2,282	(822)	6,979	4,767
Net cash provided by (used in) operating activities	—	(196)	2,708	3,874	165	6,551
Cash flows from investing activities:						
Intercompany contributions paid	—	(40)	—	(40)	80	—
Distributions received from subsidiaries	—	1,834	—	1,858	(3,692)	—
Net change in intercompany loans	—	410	(286)	5,664	(5,788)	—
Acquisitions of businesses, net of cash acquired	—	—	—	(40)	—	(40)
Proceeds from sales of businesses	—	—	—	10	—	10
Purchases of property, plant and equipment	—	—	(254)	(841)	26	(1,069)
Proceeds from disposals of property, plant and equipment	—	—	25	442	(26)	441
Purchases of investments	—	—	(200)	(7)	—	(207)
Proceeds from sales and maturities of investments	—	—	200	—	—	200
Other	—	—	—	(9)	—	(9)
Net cash provided by (used in) investing activities	—	2,204	(515)	7,037	(9,400)	(674)
Cash flows from financing activities:						
Intercompany contributions received	—	—	205	40	(245)	—
Dividend and distribution payments	—	(1,745)	(1,834)	(1,858)	3,692	(1,745)
Net intercompany borrowings	—	(379)	(5,797)	388	5,788	—
Proceeds from issuance of long-term debt	—	—	17,426	—	—	17,426
Repayment of debt	—	—	(5,704)	(7,964)	—	(13,668)
Payment of debt issuance costs	—	—	(24)	—	—	(24)
Issuance of common stock, net of shares withheld for employee taxes	—	257	—	—	—	257
Payment of capital lease obligations	—	—	(2)	(14)	—	(16)
Net cash provided by (used in) financing activities	—	(1,867)	4,270	(9,408)	9,235	2,230
Net change in cash and cash equivalents	—	141	6,463	1,503	—	8,107
Cash and cash equivalents at the beginning of period	—	53	1,092	1,952	—	3,097
Cash and cash equivalents at end of period	$ —	$ 194	$7,555	$ 3,455	$ —	$ 11,204

	Condensed Consolidating Statements of Cash Flows					
	Fiscal Year Ended					
	October 30, 2016					
	Parent Guarantor	Subsidiary Guarantor	Subsidiary Issuers	Non-Guarantor Subsidiaries	Eliminations	Consolidated Totals
	(in millions)					
Cash flows from operating activities:						
Net loss	$(1,739)	$(1,861)	$(2,571)	$(3,255)	$ 7,565	$ (1,861)
Total adjustments to reconcile net loss to net cash provided by (used in) operating activities	1,739	1,818	2,303	6,637	(7,225)	5,272
Net cash provided by (used in) operating activities	—	(43)	(268)	3,382	340	3,411
Cash flows from investing activities:						
Intercompany contributions paid	—	(35)	(7,400)	(4,970)	12,405	—
Distributions received from subsidiaries	—	250	356	250	(856)	—
Net change in intercompany loans	—	—	(102)	(10,587)	10,689	—
Acquisitions of businesses, net of cash acquired	—	—	(10,965)	910	—	(10,055)
Proceeds from sales of businesses	—	—	58	840	—	898
Purchases of property, plant and equipment	—	—	(80)	(643)	—	(723)
Proceeds from disposals of property, plant and equipment	—	—	—	5	—	5
Purchases of investments	—	—	—	(58)	—	(58)
Proceeds from sales and maturities of investments	—	—	13	91	—	104
Other	—	—	(2)	(9)	—	(11)
Net cash provided by (used in) investing activities	—	215	(18,122)	(14,171)	22,238	(9,840)
Cash flows from financing activities:						
Intercompany contributions received	—	—	5,310	7,435	(12,745)	—
Dividend and distribution payments	—	(628)	(250)	(728)	856	(750)
Net intercompany borrowings	—	286	10,301	102	(10,689)	—
Proceeds from issuance of long-term debt	—	—	9,551	9,959	—	19,510
Repayment of debt	—	—	(5,358)	(5,959)	—	(11,317)
Payment of debt issuance costs	—	—	(77)	(46)	—	(123)
Excess tax benefits from stock-based compensation	—	—	5	84	—	89
Issuance of common stock, net of shares withheld for employee taxes	—	223	—	72	—	295
Net cash provided by (used in) financing activities	—	(119)	19,482	10,919	(22,578)	7,704
Net change in cash and cash equivalents	—	53	1,092	130	—	1,275
Cash and cash equivalents at beginning of period	—	—	—	1,822	—	1,822

Cash and cash equivalents at end of period	$ —	$ 53	$ 1,092	$ 1,952	$ —	$ 3,097

16. Subsequent Events

Acquisition of CA, Inc.

On November 5, 2018, we completed our acquisition, or the CA Merger, of CA, Inc., or CA. We assumed all unvested CA stock options, outstanding restricted stock awards, restricted stock units and performance stock units held by continuing employees. All vested in-the-money CA stock options and director stock units were cashed out upon the completion of the CA Merger. CA was a leading provider of information technology management software and solutions. We acquired CA to enhance our infrastructure software capabilities.

Preliminary Purchase Consideration

		(In millions)
Cash paid for outstanding CA common stock	$	18,402
Cash paid by Broadcom to retire CA's term loan		274
Cash paid for vested CA equity awards		77
Fair value of partially vested assumed equity awards		91
Total purchase consideration	$	18,844

We financed the CA Merger with the net proceeds from borrowings under the 2019 Term Loans, as discussed in further detail below, as well as cash on hand of the combined companies. We assumed $2.25 billion of CA's outstanding senior unsecured notes.

We are currently evaluating the purchase price allocation following the consummation of the CA Merger. It is not practicable to disclose the preliminary purchase price allocation or unaudited pro forma combined financial information for this transaction, given the short period of time between the acquisition date and the issuance of these consolidated financial statements.

2019 Term Loans

In connection with the completion of the CA Merger, on November 5, 2018, we entered into a credit agreement, or the 2019 Credit Agreement, which provides for a $5 billion unsecured revolving credit facility, or the Revolving Facility, a $9 billion unsecured term A-3 facility, or the Term A-3 Loan, and a $9 billion unsecured term A-5 facility, or the Term A-5 Loan, and together with the Term A-3 Loan, referred to as the 2019 Term Loans. Our obligations under the 2019 Credit Agreement are guaranteed on an unsecured basis by BRCM, Broadcom Cayman Finance Limited and Broadcom-Singapore.

The term loans under the Term A-3 Loan and Term A-5 Loan have variable interest rates and will mature and be payable in full on the third or fifth anniversary, respectively. The Revolving Facility is a five-year unsecured revolving facility. Initially, the aggregate commitment is equal to $5 billion, of which $500 million is available for the issuance of multicurrency letters of credit. The issuance of letters of credit reduces the aggregate amount otherwise available under the Revolving Facility for the making of revolving loans. Subject to the terms of the 2019 Credit Agreement, we may borrow, repay and reborrow revolving loans at any time prior to the earlier of (a) the fifth anniversary, and (b) the date of termination in whole of the revolving lenders' commitments under the 2019 Credit Agreement in accordance with the terms thereof. We had no borrowings outstanding under the Revolving Facility on November 5, 2018.

In connection with the CA Merger, we entered into a definitive agreement to sell Veracode, Inc., a wholly owned subsidiary of CA and provider of application security testing solutions, to Thoma Bravo, LLC for cash consideration of $950 million, subject to customary closing conditions.

Stock Repurchase Authorization

On December 5, 2018, our Board of Directors increased our current stock repurchase program authorization by $6 billion. The repurchase authorization is effective through November 3, 2019, the end of Broadcom's fiscal year 2019.

Cash Dividends Declared

On December 6, 2018, we announced that our Board of Directors has declared a cash dividend of $2.65 per share, payable on December 28, 2018 to stockholders of record on December 19, 2018.

[Table of Contents](#)

Supplementary Financial Data — Quarterly Data (Unaudited)

	Fiscal Quarter Ended							
	November 4, 2018 (1)	August 5, 2018 (2)	May 6, 2018 (3)	February 4, 2018 (4)	October 29, 2017 (5)	July 30, 2017 (6)	April 30, 2017 (7)	January 29, 2017 (8)
	(In millions, except per share data)							
Net revenue	$ 5,444	$ 5,063	$ 5,014	$ 5,327	$ 4,844	$ 4,463	$ 4,190	$ 4,139
Gross margin	2,935	2,619	2,551	2,628	2,383	2,149	1,976	2,001
Operating income	1,652	1,339	1,201	943	755	648	474	506
Income from continuing operations	1,115	1,197	3,736	6,581	556	509	468	257
Income (loss) from discontinued operations, net of income taxes	—	(1)	(3)	(15)	5	(2)	(4)	(5)
Net income	1,115	1,196	3,733	6,566	561	507	464	252
Net income attributable to noncontrolling interest	—	—	15	336	29	26	24	13
Net income attributable to common stock	$ 1,115	$ 1,196	$ 3,718	$ 6,230	$ 532	$ 481	$ 440	$ 239
Diluted income (loss) per share attributable to common stock:								
Income per share from continuing operations	$ 2.64	$ 2.71	$ 8.34	$ 14.66	$ 1.24	$ 1.14	$ 1.06	$ 0.58
Income (loss) per share from discontinued operations, net of income taxes	—	—	(0.01)	(0.04)	0.01	—	(0.01)	(0.01)
Net income per share	$ 2.64	$ 2.71	$ 8.33	$ 14.62	$ 1.25	$ 1.14	$ 1.05	$ 0.57
Dividends declared and paid per share	$ 1.75	$ 1.75	$ 1.75	$ 1.75	$ 1.02	$ 1.02	$ 1.02	$ 1.02
Dividends declared and paid per share-full year	$ 7.00				$ 4.08			

---

(1) Includes amortization of acquisition-related intangible assets of $829 million and impairment on investment of $106 million.

(2) Includes amortization of acquisition-related intangible assets of $830 million.

(3) Includes amortization of acquisition-related intangible assets of $832 million.

(4) Includes the results of Brocade beginning with the fiscal quarter ended February 4, 2018 in connection with the completion of the Brocade Merger on November 17, 2017. Also includes amortization of acquisition-related intangible assets of $1,054 million, a purchase accounting effect on inventory charge of $70 million and restructuring, impairment and disposal charges of $145 million.

(5) Includes amortization of acquisition-related intangible assets of $1,099 million and $110 million of litigation settlement charges.

(6) Includes amortization of acquisition-related intangible assets of $1,096 million.

(7) Includes amortization of acquisition-related intangible assets of $1,081 million.

(8) Includes amortization of acquisition-related intangible assets of $999 million and a loss on debt extinguishment of $159 million.

Schedule II — Valuation and Qualifying Accounts

	Balance at Beginning of Period	Additions to Allowances	Charges Utilized/ Write-offs	Balance at End of Period
		(In millions)		
Accounts receivable allowances:				
Distributor credit allowances (1)				
Fiscal year ended November 4, 2018	$ 177	$ 882	$ (908)	$ 151
Fiscal year ended October 29, 2017	$ 252	$ 1,176	$ (1,251)	$ 177
Fiscal year ended October 30, 2016	$ 66	$ 1,216	$ (1,030)	$ 252
Other accounts receivable allowances (2)				
Fiscal year ended November 4, 2018	$ 31	$ 116	$ (135)	$ 12
Fiscal year ended October 29, 2017	$ 40	$ 49	$ (58)	$ 31
Fiscal year ended October 30, 2016	$ 9	$ 142	$ (111)	$ 40
Income tax valuation allowances (3)				
Fiscal year ended November 4, 2018	$ 1,447	$ 314	$ (414)	$ 1,347
Fiscal year ended October 29, 2017	$ 1,003	$ 460	$ (16)	$ 1,447
Fiscal year ended October 30, 2016	$ 147	$ 882	$ (26)	$ 1,003

(1) Distributor credit allowances relate to price adjustments and other allowances.

(2) Other accounts receivable allowances primarily include sales returns and allowance for doubtful accounts.

(3) The decrease in the fiscal year 2018 valuation allowance resulted from restructuring activities offset by increases due to the Brocade Merger and in foreign deferred tax assets arising from foreign credits and losses not expected to be realized. The increase in the fiscal year 2017 valuation allowances resulted from foreign deferred tax assets arising from foreign losses not expected to be realized.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures.

Our management, with the participation of our Chief Executive Officer, or CEO, and Chief Financial Officer, or CFO, evaluated the effectiveness of Broadcom’s disclosure controls and procedures as of November 4, 2018. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of November 4, 2018, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by the Board, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets;

- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of us are being made only in accordance with authorizations of management and directors; and

- 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 financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

Our management assessed the effectiveness of our internal control over financial reporting as of November 4, 2018. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework* (2013). Based on this assessment, our management concluded that, as of November 4, 2018, our internal control over financial reporting is effective based on those criteria.

The effectiveness of our internal control over financial reporting, as of November 4, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included in Part II, Item 8. of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting.

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fiscal quarter ended November 4, 2018 that has materially affected, or is 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 regarding our directors, executive officers and compliance with Section 16(a) of the Exchange Act, set forth in the sections entitled "Proposal 1 — Election of Directors," "Executive Officers," "Corporate Governance" and "Section 16(a) Beneficial Ownership Reporting Compliance," in our definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2018 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

We have adopted a written Code of Ethics and Business Conduct that applies to all of our employees and directors, including our principal executive officer, principal financial officer and principal accounting officer, or persons performing similar functions and have posted it in the "Investors Center — Governance" section of our website, which is located at www.broadcom.com. We intend to satisfy any disclosure requirement under Item 5.05 of Form 8-K regarding any amendments to, or waivers from, our Code of Ethics and Business Conduct by posting such information on our website at the internet address and location above.

ITEM 11. EXECUTIVE COMPENSATION

The information regarding executive compensation required by this Item 11 set forth in the sections entitled "Director Compensation", "Compensation Discussion and Analysis," "Executive Compensation," "Compensation Committee Report" and "Corporate Governance — Compensation Committee Interlocks and Insider Participation" in our definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2018 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section. However, the Compensation Committee Report included in such definitive Proxy Statement shall not be deemed "filed" with the SEC for the purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing made by us with the SEC, regardless of any general incorporation language in such filing.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information regarding security ownership of certain beneficial owners and management and related stockholder matters required by this Item 12 set forth in the section entitled "Security Ownership of Certain Beneficial Owners, Directors and Executive Officers" and "Equity Compensation Plan Information" in our definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2018 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information regarding certain relationships, related transactions and director independence required by this Item 13 set forth in the sections entitled "Corporate Governance" and "Certain Relationships and Related Party Transactions" in our definitive

Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2018 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information regarding principal accounting fees and services required by this Item 14 set forth in the proposal relating to the re-appointment of our independent registered public accounting firm in our definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the end of our 2018 fiscal year pursuant to General Instruction G(3) to Form 10-K is hereby incorporated by reference in this section.

Table of Contents

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

The following consolidated financial statements are included in Item 8 of this Annual Report on Form 10-K:

2. Financial Statement Schedules

The financial statement schedule of the Registrant and its subsidiaries for fiscal years 2018, 2017 and 2016 required by Item 15(a) (Schedule II, Valuation and Qualifying Accounts) is included in Item 8 of this Annual Report on Form 10-K:

Schedules not filed have been omitted because they are not applicable, are not required or the information required to be set forth therein is included in the financial statements or notes thereto.

3. Exhibits

The documents set forth below are filed herewith or incorporated by reference to the location indicated.

Exhibit No.	Description	Incorporated by Referenced Herein: Form	Incorporated by Referenced Herein: Filing Date	Filed Herewith
2.1#	Agreement and Plan of Merger, dated May 28, 2015, by and among Pavonia Limited, Avago Technologies Limited, Safari Cayman L.P., Avago Technologies Cayman Holdings Ltd., Avago Technologies Cayman Finance Limited, Buffalo CS Merger Sub, Inc., Buffalo UT Merger Sub, Inc. and Broadcom Corporation.	Avago Technologies Limited Current Report on Form 8-K (Commission File No. 001-34428)	May 29, 2015	
2.2	Amendment No. 1 to Agreement and Plan of Merger, dated July 29,	Avago Technologies Limited Current Report	July 31, 2015	

	2015, by and between Avago Technologies Limited and Broadcom Corporation.	on Form 8-K (Commission File No. 001-34428)	
2.3#	Agreement and Plan of Merger, dated November 2, 2016, by and among Brocade Communications Systems, Inc., Broadcom Limited, Broadcom Corporation and Bobcat Merger Sub, Inc.	Broadcom Limited Current Report on Form 8-K/A (Commission File No. 001-37690)	November 2, 2016
2.4#	Agreement and Plan of Merger, dated as of July 11, 2018, by and among Broadcom, Inc., Collie Acquisition Corp. and CA, Inc.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	July 12, 2018

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
3.1	Amended and Restated Certificate of Incorporation.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
3.2	Amended and Restated Bylaws.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
4.1	Form of Common Stock Certificate.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 14, 2018	
4.2	Indenture, dated as of January 19, 2017, by and among the Broadcom Corporation and Broadcom Cayman Finance Limited ("Co-Issuers"), the Company, Broadcom Cayman L.P., and BC Luxembourg S.à r.l. (the "Guarantors") and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.3	Supplement Indenture to the January 2017 Indenture, dated as of April 9, 2018.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	April 9, 2018	
4.4	Form of 2.375% Senior Note due 2020 (included in Exhibit 4.2).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.5	Form of 3.000% Senior Note due 2022 (included in Exhibit 4.2).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.6	Form of 3.625% Senior Note due 2024 (included in Exhibit 4.2).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.7	Form of 3.875% Senior Note due 2027 (included in Exhibit 4.2).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	January 20, 2017	
4.8	Indenture, dated as of October 17, 2017, by and among the Co-Issuers, the Company and Broadcom Cayman L.P., (the "October Guarantors") and Wilmington Trust, National Association, as trustee.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017	
4.9		Broadcom Inc. Current Report on Form 8-K	April 9, 2018	

	Supplement Indenture to October 2017 Indenture, dated as of April 9, 2018.	(Commission File No. 001-38449)	
4.10	Form of 2.200% Senior Note due 2021 (included in Exhibit 4.8).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017
4.11	Form of 2.650% Senior Note due 2023 (included in Exhibit 4.8).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017
4.12	Form of 3.125% Senior Note due 2025 (included in Exhibit 4.8).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017
4.13	Form of 3.500% Senior Note due 2028 (included in Exhibit 4.8).	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	October 17, 2017
4.14	Voting Agreement, dated July 11, 2018, by and among Broadcom Inc., Collie Acquisition Corp., Careal Property Group AG, BigPoint Holding AG, Martin Haefner and Eva Maria Bucher-Haefner.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	July 12, 2018
10.1	Form of Indemnification and Advancement Agreement (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.2	Form of Indemnification Agreement (Directors) (effective June 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	June 9, 2016	
10.3	Form of Indemnification Agreement (Officers) (effective June 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	June 9, 2016	
10.4	Form of Indemnification Agreement (Directors) (effective February 1, 2016).	Broadcom Limited Current Report on Form 8-K12B (Commission File No. 001-37690)	February 2, 2016	
10.5	Form of Indemnification Agreement (Directors) (effective prior to February 1, 2016).	Avago Technologies Limited Quarterly Report on Form 10-Q (Commission File No. 001-34428)	September 13, 2013	
10.6	Form of Indemnification Agreement (Officers) (effective prior to February 1, 2016).	Avago Technologies Finance Pte. Ltd. Amendment No. 1 to Annual Report on Form 20-F/A (Commission File No. 333-137664)	February 27, 2008	
10.7	Credit Agreement, dated as of November 5, 2018, among Broadcom Inc., the lenders and other parties party thereto, and Bank of America, N.A., as Administrative Agent.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	November 5, 2018	
10.8	Sublease Agreement, dated June 5, 2009, between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Limited Registration Annual Report on Form 10-K (Commission File No. 001-33428)	December 15, 2010	
10.9	Amendments of Sublease Agreement between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at 1 Yishun Avenue 7 Singapore 768923.	Avago Technologies Limited Registration Annual Report on Form 10-K (Commission File No. 001-33428)	December 17, 2015	
10.10	Amendment No. 3 of Sublease Agreement between Agilent Technologies Singapore Pte. Ltd. and Avago Technologies Manufacturing (Singapore) Pte. Ltd., relating to Avago's facility at	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	

	1 Yishun Avenue 7 Singapore 768923.		
10.11	Lease No. I/33183P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1935X of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49501Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006
10.12	Lease No. I/31607P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1937C of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49499Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006
10.13	Lease No. I/33182P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 2134N of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/49500Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.14	Lease No. I/33160P issued by Singapore Housing and Development Board to Compaq Asia Pte Ltd in respect of the land and structures comprised in Lot 1975P of Mukim 19, dated September 26, 2000, and includes the Variation of Lease I/ 49502Q registered January 15, 2002, relating to Avago's facility at 1 Yishun Avenue 7, Singapore 768923.	Avago Technologies Finance Pte. Ltd. Registration Statement on Form F-4 (Commission File No. 333-137664)	November 15, 2006	
10.15	Lease Agreement dated as of April 29, 2005 by and between TriQuint Optoelectronics, Inc. and CyOptics, Inc. and related amendments and renewals.	Avago Technologies Limited Quarterly Report on Form 10-Q (Commission File No. 001-34428)	September 13, 2013	
10.16*	Lease Agreement dated December 29, 2004 between Irvine Commercial Property Company and Broadcom Corporation.	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	March 1, 2005	
10.17	First Amendment, Second Amendment, and Third Amendment dated June 7, 2005, April 9, 2007 and April 9, 2007, respectively, to Lease dated December 29, 2004 between Irvine Commercial Property Company LLC and Broadcom Corporation.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	October 24, 2007	
10.18	Fourth Amendment dated November 19, 2007 to Lease dated December 29, 2004 between Irvine Commercial Property Company LLC and Broadcom Corporation.	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	January 28, 2008	
10.19	Lease Agreement dated August 10, 2017 between Five Point Office Venture I, LLC and Broadcom Corporation.	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.20*	Settlement and Patent License and Non-Assert Agreement by and between Qualcomm Incorporated and Broadcom Corporation.	Broadcom Corporation Current Report on Form 8-K/A (Commission File No. 000-23993)	July 23, 2009	
10.21+	Avago Technologies Limited 2009 Equity Incentive Award Plan.	Avago Technologies Limited Registration Statement on Form S-1 (Commission File No. 333-153127)	July 27, 2009	
10.22+				

	Second Amended and Restated Employee Stock Purchase Plan.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	February 2, 2016
10.23+	Amendment to Broadcom Limited Second Amended and Restated Employee Stock Purchase Plan.	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018
10.24+	LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-195741)	May 6, 2014
10.25+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016
10.26+	Amendment to the LSI Corporation 2003 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018
10.27+	Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	January 29, 2015
10.28+	Amendment to the Broadcom Corporation 2012 Stock Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016

Exhibit No.	Description	Incorporated by Referenced Herein		Filed Herewith
		Form	Filing Date	
10.29+	Amendment to the Broadcom Corporation 2012 Stock Incentive Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.30+	Broadcom Corporation 1998 Stock Incentive Plan, as amended and restated November 11, 2010.	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	February 2, 2011	
10.31+	Amendment to the Broadcom Corporation 1998 Stock Incentive Plan (effective February 1, 2016).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.32+	Brocade Communication Systems, Inc. 2009 Stock Plan, as amended and restated April 11, 2017.	Brocade Communication Systems, Inc. Current Report on Form 8-K (Commission File No. 000-25601)	April 12, 2017	
10.33+	Amendment to the Brocade Communication Systems, Inc. 2009 Stock Plan (effective November 17, 2017).	Broadcom Limited Registration Statement on Form S-8 (Commission File No. 333-221654)	November 11, 2017	
10.34+	Amendment to the Brocade Communication Systems, Inc. 2009 Stock Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-12B (Commission File No. 001-38449)	April 4, 2018	
10.35+	Brocade Communications Systems, Inc. Amended and Restated Inducement Award Plan, effective as of May 24, 2016.	Brocade Communication Systems, Inc. Post-Effective Amendment No. 1 to Form S-4 on Form S-8 Registration Statement (Commission File No. 333-211823)	June 3, 2016	
10.36+	Amendment to the Brocade Communication Systems, Inc. Amended and Restated Inducement Award Plan (effective November 17, 2017).	Broadcom Limited Registration Statement on Form S-8 (Commission File No. 333-221654)	November 11, 2017	
10.37+	Amendment to the Brocade Communication Systems, Inc. Amended and Restated Inducement Award Plan (effective April 4, 2018).	Broadcom Inc. Current Report on Form 8-K12B (Commission File No. 001-38449)	April 4, 2018	
10.38+	Form of Annual Bonus Plan for Executive Employees.	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 23, 2016	
10.39+	Form of Option Agreement Under Avago Technologies Limited 2009 Equity Incentive Award Plan.	Amendment No. 5 to Avago Technologies Limited Registration Statement on Form S-1	July 27, 2009	

		(Commission File No. 333-153127)		
10.40+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan.	Avago Technologies Limited Quarterly Report on Form 10-Q (Commission File No. 001-34428)	June 7, 2013	
10.41+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.42+	Form of Restricted Stock Unit Agreement (Sell to Cover) Under Avago Technologies Limited 2009 Equity Incentive Award Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.43+	Form of Restricted Stock Unit Award Agreement under Avago Technologies Limited 2009 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.44+	Form of Restricted Stock Unit Award Agreement under Avago Technologies Limited 2009 Equity Incentive Plan (effective December 5, 2018).			X
10.45+	Form of Agreement for Multi-Year Equity Award of Restricted Stock Unit Award under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	December 6, 2018	

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.46+	Form of Performance Stock Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Award Plan.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 9, 2017	
10.47+	Form of Performance Share Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective March 13, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018	
10.48+	Form of Performance Share Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-38449)	June 16, 2018	
10.49+	Form of Performance Stock Unit Agreement (Relative TSR) under Avago Technologies Limited 2009 Equity Incentive Plan (effective December 5, 2018).			X
10.50+	Form of Agreement for Multi-Year Equity Award of Performance Stock Units under the Avago Technologies Limited 2009 Equity Incentive Award Plan).	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	December 6, 2018	
10.51+	Form of Option Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-196438)	June 2, 2014	
10.52+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended.	Avago Technologies Limited Registration Statement on Form S-8 (Commission File No. 333-196438)	June 2, 2014	
10.53+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016	
10.54+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.55+	Form of Restricted Stock Unit Award Agreement under LSI Corporation 2003 Equity Incentive Plan, as amended (effective April 4 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018	
10.56+	Form of Restricted Stock Unit Award Agreement under LSI			X

	Corporation 2003 Equity Incentive Plan, as amended (effective December 5, 2018).		
10.57+	Broadcom Corporation Amended and Restated Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	April 24, 2014
10.58+	Amendment to Broadcom Corporation Amended and Restated Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	July 30, 2015
10.59+	Form of Restricted Stock Unit Issuance Agreement for executive officers under the Broadcom Corporation 2012 Stock Incentive Plan (for RSUs governed by the RSU Incentive Award Program (3 year cliff vesting)).	Broadcom Corporation Annual Report on Form 10-K (Commission File No. 000-23993)	January 30, 2014
10.60+	Form of Award Letter under the Broadcom Corporation Restricted Stock Units Incentive Award Program.	Broadcom Corporation Quarterly Report on Form 10-Q (Commission File No. 000-23993)	April 24, 2014
10.61+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan (effective February 1, 2016).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 10, 2016

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.62+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan (effective December 5, 2017).	Broadcom Limited Annual Report on Form 10-K (Commission File No. 001-37690)	December 21, 2017	
10.63+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018	
10.64+	Form of Restricted Stock Unit Award Agreement under Broadcom Corporation 2012 Stock Incentive Plan, as amended (effective December 5, 2018).			X
10.65+	Form of Agreement for Multi-Year Equity Award of Restricted Stock Units under the Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	December 6, 2018	
10.66+	Form of Performance Stock Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 9, 2017	
10.67+	Form of Performance Share Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective March 15, 2018).	Broadcom Limited Quarterly Report on Form 10-Q (Commission File No. 001-37690)	March 15, 2018	
10.68+	Form of Performance Share Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective April 4, 2018).	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018	
10.69+	Form of Performance Stock Unit Agreement (Relative TSR) under Broadcom Corporation 2012 Stock Incentive Plan (effective December 5, 2018).			X
10.70+	Form of Agreement for Multi-Year Equity Award of Performance Stock Units under the Broadcom Corporation 2012 Stock Incentive Plan.	Broadcom Inc. Current Report on Form 8-K (Commission File No. 001-34889)	December 6, 2018	
10.71+	Performance Stock Unit Award Agreement, dated June 15, 2016, between Broadcom Limited and Hock E. Tan.	Broadcom Limited Current Report on Form 8-K (Commission File No. 001-37690)	June 16, 2016	
10.72+	Performance Stock Unit Award Agreement, dated June 15, 2017,	Broadcom Limited Current Report on Form	June 19, 2017	

	between Broadcom Limited and Hock E. Tan.	8-K (Commission File No. 001-37690)	
10.73+	Policy on Acceleration of Executive Staff Equity Awards in the Event of Death or Permanent Disability.	Avago Technologies Limited Current Report on Form 10-Q (Commission File No. 001-34428)	September 10, 2015
10.74+	Severance Benefits Agreement, dated January 23, 2014, between Avago Technologies Limited and Hock E. Tan.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018
10.75+	Severance Benefits Agreement, dated October 17, 2016, between Broadcom Limited and Thomas H. Krause, Jr.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018
10.76+	Severance Benefits Agreement, dated June 3, 2015, between Avago Technologies Limited and Charlie Kawwas.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018
10.77+	Severance Benefits Agreement, dated September 26, 2017, between Broadcom Limited and Mark Brazeal.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018
10.78+	Severance Benefits Agreement, dated January 23, 2014, between Avago Technologies Limited and Bryan Ingram.	Broadcom Inc. Quarterly Report on Form 10-Q (Commission File No. 001-34889)	June 16, 2018

Table of Contents

Exhibit No.	Description	Incorporated by Referenced Herein Form	Filing Date	Filed Herewith
10.79+	Continuing Employment Offer Letter, dated June 3, 2015, between Avago Technologies Limited and Charlie Kawwas.	Avago Technologies Limited Quarterly Report on Form 10-Q (Commission File No. 001-34428)	June 10, 2015	
21.1	List of Subsidiaries.			X
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.			X
24.1	Power of Attorney (see signature page to this Form 10-K).			X
31.1	Certification of Principal Executive Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			X
31.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to Rule 13a-14 of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			X
32.1	Certification of Principal Executive Officer of Broadcom Inc. Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			X
32.2	Certification of Principal Financial Officer of Broadcom Inc. Pursuant to 18 U.S.C. Section 1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			X
101.INS	XBRL Instance Document			X
101.SCH	XBRL Schema Document			X
101.CAL	XBRL Calculation Linkbase Document			X
101.DEF	XBRL Definition Linkbase Document			X
101.LAB	XBRL Labels Linkbase Document			X
101.PRE	XBRL Presentation Linkbase Document			X

Notes:

+ Indicates a management contract or compensatory plan or arrangement.

#

Schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. Broadcom Inc. hereby undertakes to furnish supplementally copies of any omitted schedules upon request by the SEC.

* Certain information omitted pursuant to a request for confidential treatment filed with the SEC.

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.

BROADCOM INC.

By: **/s/ Hock E. Tan**

Name: Hock E. Tan

Title: President and Chief Executive Officer

Date: December 21, 2018

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Hock E. Tan, Thomas H. Krause, Jr., Mark D. Brazeal and Kirsten M. Spears, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Table of Contents

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the Registrant in the capacities indicated and on the dates indicated.

Signature	Title	Date
/s/ Hock E. Tan **Hock E. Tan**	President and Chief Executive Officer and Director (Principal Executive Officer)	December 21, 2018
/s/ Thomas H. Krause, Jr. **Thomas H. Krause, Jr.**	Chief Financial Officer (Principal Financial Officer)	December 21, 2018
/s/ Kirsten M. Spears **Kirsten M. Spears**	Principal Accounting Officer	December 21, 2018
/s/ Henry Samueli **Henry Samueli**	Chairman of the Board of Directors	December 21, 2018
/s/ Eddy W. Hartenstein **Eddy W. Hartenstein**	Lead Independent Director	December 21, 2018
/s/ Gayla J. Delly **Gayla J. Delly**	Director	December 21, 2018
/s/ James Diller Sr. **James Diller Sr.**	Director	December 21, 2018
/s/ Lewis C. Eggebrecht **Lewis C. Eggebrecht**	Director	December 21, 2018
Check Kian Low	Director	
/s/ Donald Macleod **Donald Macleod**	Director	December 21, 2018
/s/ Peter J. Marks **Peter J. Marks**	Director	December 21, 2018