# PART I

## **ITEM 1. BUSINESS**

## **Our Company**

Starting with a focus on PC graphics, NVIDIA invented the GPU to solve some of the most complex problems in computer science. We have extended our emphasis in recent years to the revolutionary field of artificial intelligence, or AI.

The GPU was initially used to simulate human imagination, enabling the virtual worlds of video games and films. Today, it also simulates human intelligence, enabling a deeper understanding of the physical world. Its parallel processing capabilities, supported by up to thousands of computing cores, are essential to running deep learning algorithms. This form of AI, in which software writes itself, enables computers to learn from data and serve as the brain of computers, robots and self-driving cars that can perceive and understand the world. GPU-powered deep learning is being rapidly adopted by thousands of enterprises to deliver services and features that would have been impossible with traditional coding.

NVIDIA delivers value to its customers through PC, mobile and cloud architectures. Vertical integration enables us to bring together hardware, system software, programmable algorithms, libraries, systems and services to create unique value for the markets we serve. Offerings like the NVIDIA DGX AI supercomputer, the NVIDIA DRIVE AI car computing platform and the GeForce NOW cloud gaming service bring together combinations of the company's hardware, software and services to meet the exacting demands of specific audiences.

Innovation is at our core. We have invested over \$13 billion in research and development since our inception, yielding inventions that are essential to modern computing. The GPU introduced the world to the power of programmable graphics. Our CUDA programming language harnessed the GPU's parallel processing capabilities to accelerate scientific and AI computing. Virtualized GPUs put the power of parallel processing into the cloud, accessible from any connected device, anywhere. Other breakthroughs in our evolving GPU architectures and related technologies enable GPUs to be more powerful and efficient, and to fuel more powerful AI workloads with deep learning capabilities.

Gamers choose NVIDIA GPUs to enjoy immersive, increasingly cinematic fantasy worlds. GPUs also help underpin the world's fastest growing spectator sport, eSports, which attracts hundreds of millions of viewers to watch top-quality gaming. And more than 100 million people participate in MOBA - multiplayer online battle area - games.

Professional designers use our GPUs to create visual effects in movies and design products ranging from soft drink bottles to commercial aircraft.

Researchers use our GPUs to accelerate a wide range of important applications, from simulating viruses to exploring the origins of the universe. The world's leading cloud services companies, and a rapidly growing number of enterprises and startups, use GPUs to facilitate deep learning that meets, and in some cases surpasses, human perception.

Our GPU product brands are aimed at specialized markets including GeForce for gamers; Quadro for designers; Tesla and DGX for AI data scientists and big data researchers; and GRID for cloud-based visual computing users. Our Tegra brand integrates an entire computer onto a single chip, and incorporates GPUs and multi-core CPUs to drive supercomputing for mobile gaming and entertainment devices, as well as autonomous robots, drones and cars.

Headquartered in Santa Clara, California, NVIDIA was incorporated in California in April 1993 and reincorporated in Delaware in April 1998.

# **Our Businesses**

Our two reportable segments - GPU and Tegra Processor - are based on a single underlying architecture. From our proprietary processors, we have created platforms that address four large markets where our expertise is critical: Gaming, Professional Visualization, Datacenter, and Automotive.

# **Businesses**

# **NVIDIA Visual Computing and Accelerated Computing Platforms and Brands**

**GPU** 

- GeForce for PC gaming
- · GeForce NOW for cloud-based game-streaming service
- · Quadro for design professionals working in computer-aided design, video editing, special effects and other creative applications
- Tesla for AI utilizing deep learning and accelerated computing, leveraging the parallel computing capabilities of GPUs for general purpose computing
- · GRID to provide the power of NVIDIA graphics through the cloud and datacenters

## **Tegra Processor**

- · Tegra processors are primarily designed to enable branded platforms DRIVE PX and SHIELD
- DRIVE PX automotive supercomputers that provide self-driving capabilities
- SHIELD includes a family of devices and services designed to harness the power of mobile-cloud to revolutionize home entertainment, AI and gaming

# **Our Markets**

We specialize in markets in which GPU-based visual computing and accelerated computing platforms can provide tremendous throughput for applications. These platforms incorporate processors, systems software, programmable algorithms, systems and services to deliver value that is unique in the marketplace.

## Gaming

Computer gaming is the largest entertainment industry. Helping to propel its growth are the new high production value games and franchises, the rise of competitive online gaming, eSports, and the rise of virtual reality.

Our GPUs enhance the gaming experience by improving the visual quality of graphics, increasing the frame rate for smoother gameplay and improving realism by incorporating the behavior of light and physical objects. These can be enjoyed independently or together to extend the gaming experience across platforms.

Our gaming platforms utilize sophisticated 3D software and algorithms - including our GameWorks libraries that provide special effects for games. These enable us to deliver realism and immersion, even when playing games remotely from the cloud. We further enhance gaming with GeForce Experience, our gaming application that optimizes the PC user's settings for each title and enables players to record and share gameplay. It has been downloaded by more than 80 million users.

To enable virtual reality, we provide developers with a suite of software libraries called VRWorks. VRWorks allows developers to create fully immersive experiences by enabling physically realistic visuals, sound, touch interactions and simulated environments. VR requires advanced high-performance GPUs as the engine to simulate complete immersion.

Our products for the gaming market include GeForce GTX GPUs for PC gaming; the SHIELD family of tablets, portable devices for mobile gaming and TV streaming; GeForce NOW for cloud-based gaming; as well as platforms and development services for specialized console gaming devices.

# Professional Visualization

We serve the Professional Visualization market by working closely with independent software vendors to optimize their offerings for NVIDIA GPUs. Our GPU computing solutions enhance productivity and introduce new capabilities for critical parts of the workflow for such major industries as automotive, media and entertainment, architectural engineering, oil and gas, and medical imaging.

For designers who build the products we use every day, it is critical that images viewed digitally mirror reality. This requires simulating the physical behavior of light and materials, or physically-based rendering, an emerging trend in professional design. Our Iray and DesignWorks software delivers this to designers. They enable an architect designing a building with a computer-aided design package to interact with the model in real time, view it in greater detail, and generate photorealistic renderings for the client. They also allow an automotive designer to create a highly realistic 3D image of a car, which can be viewed from all angles, reducing reliance on costly, time-consuming full-scale clay models.

Just as virtual reality is becoming more important in gaming, it is also being incorporated in a growing number of enterprise applications, within medicine, architecture, product design and retailing. Virtual car showrooms, surgical training, architectural walkthroughs, and bringing historical scenes to life all deploy this technology, powered by our GPUs.

Visual computing is vital to productivity in many environments, including:

- Design and Manufacturing including computer-aided design, architectural design, consumer-products manufacturing, medical instrumentation and aerospace
- Digital Content Creation including professional video editing and post production, special effects for films and broadcast-television graphics

Our brand for this market is Quadro for workstations. Quadro GPUs enhance the productivity of designers by improving performance and adding functionality, such as photorealistic rendering, high color fidelity and advanced scalable display capabilities.

### Datacenter

The NVIDIA accelerated computing platform addresses AI, in which systems learn using unstructured data, and high performance computing, in which it speeds work toward reaching answers for more narrowly defined problems. The platform consists of our energy efficient GPUs, our CUDA programming language, specific libraries such as cuDNN, and innovations such as NVLink, which enables application scalability across multiple GPUs.

Deep learning is a new AI computer model where neural networks are trained to recognize patterns from massive amounts of data in the form of images, sounds and text - in some instances better than humans. It also greatly increases the performance and power efficiency of high-performance computers and datacenter systems. GPUs excel at parallel workloads, speeding applications by 10-75x compared with CPUs, reducing each of the many data training iterations from weeks to days. In the past year alone, GPUs have speed up training of deep neural networks for AI by as much as 12x.

We are engaged with thousands of organizations working on AI in a multitude of industries, from automating tasks such as reading medical images, to surveying coral on the sea bottom, to identifying the physical world for the blind. These organizations include the world's leading cloud services companies such as Facebook, Amazon and Baidu, which are infusing AI in applications that enable highly accurate voice recognition and real-time translation; enterprises that are increasingly turning to AI to improve products and services; and startups seeking to implement AI in disruptive ways across multiple industries. We have partnered with industry leaders such as Microsoft, IBM and SAP to bring AI to enterprise users. We also have partnerships in healthcare and manufacturing, among others, to accelerate the adoption of AI.

To enable deep learning, we provide a family of GPUs designed to speed up training and inferencing of neural networks. They are available in industry standard servers from companies such as HP, Dell and Cisco; from cloud services such as Amazon Web Services, Alicloud, Azure and Google Cloud; as well as in our DGX AI supercomputer, a purpose-built system for deep learning and AI accelerated analytics. DGX delivers performance equal to hundreds of conventional servers, comes fully integrated with hardware, deep learning software, development tools, support for existing AI frameworks, and runs popular accelerated analytics applications.

GPUs also increase the speed of applications used in such fields as aerospace, bio-science research, mechanical and fluid simulations, and energy exploration. They have already had a significant impact on scientific discovery, including improving heart surgery, HIV research and mapping human genome folds. Our GPUs and cuDNN software have been broadly adopted for deep learning, a new computing method for enabling artificial intelligence.

Accelerated computing is recognized as the path forward for high performance computing amid the slowing of Moore's Law. The proportion of supercomputers utilizing accelerators has grown sharply over the past five years, now accounting for a significant proportion of both the total systems on the TOP500 list, which ranks the 500 most powerful commercially available computer systems, and the list's total floating-point operations per second. Tesla GPU accelerators power many of the world's fastest supercomputers. They will also drive the U.S. Energy Department's next generation of supercomputers at Oak Ridge and Lawrence Livermore National Laboratories.

We also serve the datacenter market with GRID for virtualized graphics. GRID makes it possible to run graphics-intensive applications remotely on a server in the datacenter. Applications include accelerating virtual desktop infrastructures and delivering graphics-intensive applications from the cloud for industries ranging from manufacturing, healthcare and educational institutions, among others.

#### Automotive

NVIDIA has demonstrated multiple applications of AI within the car. AI can drive the car itself as a pilot, in either partial or fully autonomous mode. Also, AI can be a co-pilot, assisting the human driver in creating a safer driving experience. NVIDIA is working with automotive partners to enable AI pilot and co-pilot within the car.

NVIDIA is working with numerous automakers, tier-one suppliers, automotive research institutions, HD mapping companies, and startups to develop and deploy AI systems for self-driving vehicles. Our unified AI computing architecture starts with mapping and training deep neural networks using our Tesla GPUs, and then running them within the vehicle on the NVIDIA DRIVE PX AI car computing platform. This end-to-end approach leverages NVIDIA DriveWorks software and allows cars to receive over-the-air updates to add new features and capabilities throughout the life of a vehicle.

DRIVE PX can understand in real-time what's happening around the vehicle, precisely locate itself on an HD map, and plan a safe path forward. This advanced self-driving car platform combines deep learning, sensor fusion and surround vision to change the driving experience. Our DRIVE PX platform scales from a palm-sized, energy efficient module for AutoCruise automated highway-driving capabilities to a configuration with multiple systems aimed at enabling driverless cars. A new single-processor configuration of DRIVE PX enables vehicles to use deep neural networks to process data from multiple cameras and sensors.

We also see the opportunity for Tegra in other areas, such as robots that respond to voice and gesture commands; drones that process enormous amounts of visual-based data; and smart Android monitors. Our platform for embedded use, Jetson TX1, provides the performance and power efficiency needed for deep learning in a powerful, highly efficient environment.

# **Business Strategies**

NVIDIA's key strategies that shape our overall business approach include:

Extending our technology leadership in AI. Deep learning is fundamental to the evolution of AI. We provide a complete, end-to-end GPU computing platform for deep learning, addressing both training and inferencing. This includes GPUs, our CUDA programming language, algorithms, libraries and system software. GPUs are uniquely suited to AI, and we will continue to add AI-specific features to our GPU architecture to further extend our leadership position. Our goal is to make our GPU platforms available on every server, on every cloud service, as well as on our own AI supercomputer. We evangelize AI through partnerships with hundreds of universities and more than a thousand startups through our Inception program. Additionally, our Deep Learning Institute provides instruction on the latest techniques on how to design, train, and deploy neural network-powered machine learning in applications. It covers widely used open-source frameworks and NVIDIA's latest GPU-accelerated deep learning platforms.

Revolutionizing computing with the GPU's parallel processing capability. The massive parallel processing capabilities of NVIDIA GPUs can solve complex computational problems in significantly less time and with lower power consumption than CPUs. We work with developers worldwide who write programs using the CUDA high-level programming language. Using GPUs, developers are able to accelerate applications in areas ranging from molecular dynamics to image processing, derivatives modeling for financial risk analysis and big-data analytics.

Extending our technology leadership in visual computing. We believe that visual computing is fundamental to the continued expansion and evolution of computing. We apply our research and development resources to extending our leadership in visual computing, enabling us to enhance the user experience for consumer entertainment and professional visualization applications. Our technologies are instrumental in driving forward gaming, as developers push toward increasingly cinematic production values and the possibilities opened up by virtual reality.

Extending our visual computing leadership into mobile and cloud-computing platforms. We believe that visual computing will remain a key component in the computing paradigm defined by mobile, cloud and software as a service. We enable interactive graphics applications - such as games, movie and photo editing and design software - to be accessed by almost any device, almost anywhere. We believe that the user experience in virtual desktop infrastructures should be indistinguishable from physical environments, regardless of how graphics intensive the application. Accordingly, we leverage our research and development resources to create platforms to enable visual computing in a mobile and cloud environment.

Licensing our intellectual property. We believe our intellectual property is a valuable asset that can be accessed by our customers and partners through licenses and development agreements when they desire to build such capabilities directly into their own products, or have us do so through a custom development. Such license and development arrangements can further enhance the reach of our technology.

Enabling GPU computing platforms in key focus areas. We believe that we are well positioned to use our expertise in GPU computing to make contributions in four key markets where our visual and accelerated computing expertise is valued: gaming, professional visualization, datacenter and automotive.

# Sales and Marketing

Our sales strategy involves working with end customers and various industry ecosystems through our partner network. Our worldwide sales and marketing strategy is key to achieving our objective of providing markets with our high-performance and efficient GPU, and embedded system-on-a-chip, or SOC, platforms. Our sales and marketing teams, located across our global markets, work closely with end customers in each industry. Our partner network incorporates each industry's respective original equipment manufacturers, or OEMs, original device manufacturers, or ODMs, system builders, add-in board manufacturers, or AIBs, retailers/distributors, and industry trendsetters.

Our end customers and partner network are leveraged to integrate product features, performance, price and timing of new products for our platforms. Members of our sales team have a high level of technical expertise and product and industry knowledge to support the competitive and complex design win process. We also employ a highly skilled team of application engineers to assist our partner network in designing, testing and qualifying system designs that incorporate our platforms. We believe that the depth and quality of our design support are keys to improving our partner network's time-to-market, maintaining a high level of customer satisfaction and fostering relationships that encourage our end customers and partner network to use the next generation of our products within each platform.

As a result of our partner network strategy, a small number of customers within that network represent the majority of our sold to revenue. Sales to ASUSTeK Computer Inc. accounted for 12% of our total revenue for fiscal year2017.

To encourage software title developers and publishers to develop games optimized for platforms utilizing our products, and enterprise applications optimized for our GPUs, we seek to establish and maintain strong relationships in the software development community. Engineering and marketing personnel interact with and visit key software developers to promote and discuss our platforms, as well as to ascertain individual product requirements and solve technical problems. Our developer program makes certain that our products are available to developers prior to volume availability in order to encourage the development of AI frameworks, SDKs, and APIs for software applications and game titles that are optimized for our platforms.

As NVIDIA's business has evolved from a focus primarily on gaming products to broader markets, and from chips to platforms and complete systems, so, too, have our avenues to market. Thus, in addition to sales to customers in our partner network, certain of our platforms are also sold through e-tail channels and through some of the world's largest retailers.

## Backlog

Our sales are primarily made pursuant to standard purchase orders. The quantity of products purchased by our customers as well as our shipment schedules are subject to revisions that reflect changes in both the customers' requirements and in manufacturing availability. Our industry is characterized by relatively short lead time orders and delivery schedules, thus, we believe that only a small portion of our backlog is non-cancelable and that the dollar amount associated with the non-cancelable portion is not significant.

# Seasonality

Our GPU and Tegra processor platforms serve many markets from consumer PC gaming to enterprise workstations to government and service provider cloud datacenters; however, a majority of our revenue stems from the consumer industry. Our consumer products have typically seen stronger revenue in the second half of our fiscal year. However, there can be no assurance that this trend will continue.

# Manufacturing

We do not directly manufacture semiconductor wafers used for our products. Instead, we utilize what is known as a fabless manufacturing strategy, whereby we employ world-class suppliers for all phases of the manufacturing process, including wafer fabrication, assembly, testing, and packaging. This strategy uses the expertise of industry-leading suppliers that are certified by the International Organization for Standardization in such areas as fabrication, assembly, quality control and assurance, reliability and testing. In addition, this strategy allows us to avoid many of the significant costs and risks associated with owning and operating manufacturing operations. While we may directly procure certain raw materials used in the production of our products, such as substrates and a variety of components, our suppliers are responsible for procurement of the majority of the raw materials used in the production of our products. As a result, we can focus our resources on product design, additional quality assurance, marketing, and customer support.

We utilize industry-leading suppliers, such as Taiwan Semiconductor Manufacturing Company Limited and Samsung Electronics Co. Ltd, to produce our semiconductor wafers. We then utilize independent subcontractors, such as Advanced Semiconductor Engineering, Inc., BYD Auto Co. Ltd., Hon Hai Precision Industry Co., Ltd., JSI Logistics Ltd., King Yuan Electronics Co., Ltd. and Siliconware Precision Industries Company Ltd. to perform assembly, testing, and packaging of most of our products and platforms. We purchase substrates from IbidenCo. Ltd., Nanya Technology Corporation, and Unimicron Technology Corporation, and memory from Samsung Semiconductor, Inc. and SK Hynix.

We typically receive semiconductor products from our subcontractors, perform incoming quality assurance and then ship the semiconductors to contract equipment manufacturers, or CEMs, distributors, motherboard and AIB customers from our third-party warehouse in Hong Kong. Generally, these manufacturers assemble and test the boards based on our design kit and test specifications, and then ship our products to retailers, system builders or OEMs as motherboard and AIB solutions.

We also utilize industry-leading contract manufacturers, or CMs, such as BYD Auto Co. Ltd. and Quanta Computer, to manufacture some of our products for sale directly to end customers. In those cases, key elements such as the GPU, SOC and memory are often consigned by us to the CMs, who are responsible for the procurement of other components used in the production process.

## **Working Capital**

We focus considerable attention on managing our inventories and other working-capital-related items. We manage inventories by communicating with our customers and partners and then using our industry experience to forecast demand on a platform-by-platform basis. We then place manufacturing orders for our products that are based on forecasted demand. The quantity of products actually purchased by our customers as well as shipment schedules are subject to revisions that reflect changes in both the customers' requirements and in manufacturing availability. We generally maintain substantial inventories of our products because the semiconductor industry is characterized by short lead time orders and quick delivery schedules. A substantial amount of our inventories are maintained as semi-finished products that can be leveraged across a wide range of our processors to balance our customer demands.

Our existing cash and marketable securities balances increased by 35% to \$6.80 billion at the end of fiscal year 2017 compared with the end of fiscal year 2016. We believe that our existing cash balances and anticipated cash flows from operations will be sufficient to meet our operating requirements for at least the next twelve months.

# Research and Development

We believe that the continued introduction of new and enhanced products designed to deliver leading visual computing technology is essential to our future success. Our research and development strategy is to focus on concurrently developing multiple generations of GPUs and Tegra Processors, including GPUs for high-performance computing, and Tegra SOCs for SHIELD and other embedded products using independent design teams. Our research and development efforts include software engineering, hardware engineering, very large scale integration design engineering, process engineering, architecture and algorithms.

A critical component of our product development effort is our partnerships with industry leaders. We invest significant resources in the development of relationships with industry leaders, often assisting these companies in the product definition of their new products. We believe that forming these relationships and utilizing next-generation development tools to design, simulate and verify our products will help us remain at the forefront of visual computing and develop products that utilize leading-edge technology on a rapid basis. We believe in leveraging our significant research and development depth and scale to create differentiated products.

As of January 29, 2017, we had 7,282 full-time employees engaged in research and development. During fiscal years2017, 2016 and 2015, we incurred research and development expenses of \$1.46 billion, \$1.33 billion, and \$1.36 billion, respectively.

## Competition

The market for our products is intensely competitive and is characterized by rapid technological change and evolving industry standards. We believe that the principal competitive factors in this market are performance, breadth of product offerings, access to customers and partners and distribution channels, software support, conformity to industry standard Application Programming Interfaces, manufacturing capabilities, processor pricing and total system costs. We believe that our ability to remain competitive will depend on how well we are able to anticipate the features and functions that customers and partners will demand and whether we are able to deliver consistent volumes of our products at acceptable levels of quality and at competitive prices. We expect competition to increase from both existing competitors and new market entrants with products that may be less costly than ours, or may provide better performance or additional features not provided by our products. In addition, it is possible that new competitors or alliances among competitors could emerge and acquire significant market share.

A significant source of competition comes from companies that provide or intend to provide GPUs, embedded SOCs, and accelerated and AI computing processor products. Some of our competitors may have greater marketing, financial, distribution and manufacturing resources than we do and may be more able to adapt to customer or technological changes.

Our current competitors include:

- suppliers of or licensors of discrete and integrated GPUs and accelerated computing processing solutions, including chipsets that incorporate 3D graphics functionality as part of their existing solutions, such as Advanced Micro Devices, or AMD, ARM Holdings plc, Imagination Technologies Group plc, Intel Corporation, or Intel, and Xilinx, Inc.; and
- suppliers of SOC products that are embedded into automobiles and smart devices such as televisions, monitors, set-top boxes, and gaming devices, such as
  Ambarella, Inc., AMD, Apple, Inc., Broadcom Ltd., Intel, Mobileye N.V., Qualcomm Incorporated, Renesas Electronics Corporation, Samsung, and Texas
  Instruments Incorporated.

# **Patents and Proprietary Rights**

We rely primarily on a combination of patents, trademarks, trade secrets, employee and third-party nondisclosure agreements and licensing arrangements to protect our intellectual property in the United States and internationally. Our currently issued patents have expiration dates from March 2017 to November 2035. We have numerous patents issued, allowed and pending in the United States and in foreign jurisdictions. Our patents and pending patent applications primarily relate to our products and the technology used in connection with our products. We also rely on international treaties, organizations and foreign laws to protect our intellectual property. The laws of certain foreign countries in which our products are or may be manufactured or sold, including various countries in Asia, may not protect our products or intellectual property rights to the same extent as the laws of the United States. This decreased protection makes the possibility of piracy of our technology and products more likely. We continuously assess whether and where to seek formal protection for particular innovations and technologies based on such factors as:

- · the location in which our products are manufactured;
- · our strategic technology or product directions in different countries;
- · the degree to which intellectual property laws exist and are meaningfully enforced in different jurisdictions; and
- the commercial significance of our operations and our competitors' operations in particular countries and regions.

We have also licensed technology from third parties for incorporation in some of our products and for defensive reasons, and expect to continue to enter into such license agreements.

## **Employees**

As of January 29, 2017, we had 10,299 employees, 7,282 of whom were engaged in research and development and 3,017 of whom were engaged in sales, marketing, operations and administrative positions.

## **Environmental Regulatory Compliance**

To date, we have not incurred significant expenses related to environmental regulatory compliance matters.

# Financial Information by Reporting Segment and Geographic Data

The information included in Note 16 of the Notes to the Consolidated Financial Statements in Part IV, Item 15 of this Annual Report on Form 10-K, including financial information by reportable segment and revenue and long-lived assets by geographic region, is hereby incorporated by reference. For additional detail regarding the risks attendant to our foreign operations see "Item 1A. Risk Factors - Risks Related to Our Business, Industry and Partners - We are subject to risks and uncertainties associated with international operations which may harm our business."

## **Executive Officers of the Registrant**

The following sets forth certain information regarding our executive officers, their ages and positions as off-ebruary 24, 2017:

Name	Age	Position
Jen-Hsun Huang	54	President, Chief Executive Officer and Director
Colette M. Kress	49	Executive Vice President and Chief Financial Officer
Ajay K. Puri	62	Executive Vice President, Worldwide Field Operations
Debora Shoquist	62	Executive Vice President, Operations
Timothy S. Teter	50	Senior Vice President, General Counsel and Secretary

Jen-Hsun Huang co-founded NVIDIA in 1993 and has served as its President, Chief Executive Officer and a member of the Board of Directors since its inception. From 1985 to 1993, Mr. Huang was employed at LSI Logic Corporation, a computer chip manufacturer, where he held a variety of positions including as Director of Coreware, the business unit responsible for LSI's "system-on-chip". From 1983 to 1985, Mr. Huang was a microprocessor designer for Advanced Micro Devices, Inc., a semiconductor company. Mr. Huang holds a B.S.E.E. degree from Oregon State University and an M.S.E.E. degree from Stanford University.

Colette M. Kress joined NVIDIA in 2013 as Executive Vice President and Chief Financial Officer. Prior to NVIDIA, Ms. Kress most recently served as Senior Vice President and Chief Financial Officer of the Business Technology and Operations Finance organization at Cisco Systems, Inc., a networking equipment company, since 2010. At Cisco, Ms. Kress was responsible for financial strategy, planning, reporting and business development for all business segments, engineering and operations. From 1997 to 2010 Ms. Kress held a variety of positions at Microsoft Corporation, a software company, including, beginning in 2006, Chief Financial Officer of the Server and Tools division, where Ms. Kress was responsible for financial strategy, planning, reporting and business development for the division. Prior to joining Microsoft, Ms. Kress spent eight years at Texas Instruments Incorporated, a semiconductor company, where she held a variety of finance positions. Ms. Kress holds a B.S. degree in Finance from University of Arizona and an M.B.A. degree from Southern Methodist University.

Ajay K. Puri joined NVIDIA in 2005 as Senior Vice President, Worldwide Sales and became Executive Vice President, Worldwide Field Operations in 2009. Prior to NVIDIA, he held positions in sales, marketing, and general management over a 22-year career at Sun Microsystems, Inc., a computing systems company. Mr. Puri previously held marketing, management consulting, and product development positions at Hewlett-Packard Company, an information technology company, Booz Allen Hamilton Inc., a management and technology consulting company, and Texas Instruments Incorporated. Mr. Puri holds a B.S.E.E. degree from the University of Minnesota, an M.S.E.E. degree from the California Institute of Technology and an M.B.A. degree from Harvard Business School.

Debora Shoquist joined NVIDIA in 2007 as Senior Vice President of Operations and in 2009 became Executive Vice President of Operations. Her role has since expanded with responsibility added for Facilities in 2013, and for Information Technology in 2015. Prior to NVIDIA, Ms. Shoquist served from 2004 to 2007 as Executive Vice President of Operations at JDS Uniphase Corp., a provider of communications test and measurement solutions and optical products for the telecommunications industry. She served from 2002 to 2004 as Senior Vice President and General Manager of the Electro-Optics business at Coherent, Inc., a manufacturer of commercial and scientific laser equipment. Previously, she worked at Quantum Corp., a data protection company, as President of the Personal Computer Hard Disk Drive Division, and at Hewlett-Packard Corp. Ms. Shoquist holds a B.S. degree in Electrical Engineering from Kansas State University and a B.S. degree in Biology from Santa Clara University.

Timothy S. Teter joined NVIDIA in January 2017 as Senior Vice President, General Counsel and Secretary. Prior to NVIDIA, Mr. Teter spent more than two decades at the law firm of Cooley LLP. He was most recently a partner at Cooley, where he focused on litigating patent and technology related matters. Prior to attending law school, he worked as an engineer at Lockheed Missiles and Space Company. Mr. Teter holds a B.S. degree in Mechanical Engineering from the University of California at Davis and a J.D. degree from Stanford Law School.

### **Available Information**

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and, if applicable, amendments to those reports filed or furnished pursuant to Section 13(a) of the Securities Exchange Act of 1934, as amended, are available free of charge on or through our web site, <a href="http://www.nvidia.com">http://www.nvidia.com</a>, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or the SEC. Our web site and the information on it or connected to it are not a part of this Annual Report on Form 10-K.

# ITEM 1A. RISK FACTORS

In evaluating NVIDIA and our business, the following factors should be considered in addition to the other information in this Annual Report on Form 10-K. Before you buy our common stock, you should know that making such an investment involves risks including, but not limited to, the risks described below. Any one of the following risks could harm our business, financial condition and results of operations, which could cause our stock price to decline. Additional risks, trends and uncertainties not presently known to us or that we currently deem immaterial may also harm our business.

## Risks Related to Our Business, Industry and Partners

If we fail to meet the evolving needs of our markets, identify new products, services or technologies, or successfully compete in our target markets, our revenue and financial results will be adversely impacted.

NVIDIA-branded solutions and services are visual computing and accelerated computing platforms that address four large markets: Gaming, Professional Visualization, Datacenter, and Automotive. Our success depends to a significant extent on our ability to meet the evolving needs of these markets and to enhance our existing products, services and technologies. In addition, our success depends on our ability to identify emerging industry trends and to develop new products, services and technologies. Our existing markets and products and new markets and products may require a considerable investment of technical, financial, compliance, sales and marketing resources. We are currently devoting significant resources to the development of technologies and business offerings in markets where our operating history is less extensive, such as the automotive market.

We cannot assure you that our strategic direction will result in innovative products and technologies that provide value to our customers and partners. If we fail to anticipate the changing needs of our target markets and emerging technology trends, or adapt that strategy as market conditions evolve, in a timely manner to exploit potential market opportunities our business will be harmed. In addition, if demand for products and services from these growth markets is below our expectations, if we fail to achieve consumer or market acceptance of them or if we are not able to develop these products and services in a cost effective or efficient manner, we may not realize benefits from our strategy.

Our target markets remain extremely competitive, and we expect competition to intensify as current competitors expand their product and/or service offerings, industry standards continue to evolve and new competitors enter these markets. If we are unable to successfully compete in our target markets, including in significant international markets such as China, demand for our products, services and technologies could decrease which would cause our revenue to decline and our financial results to suffer. Our competitors' products, services and technologies may be less costly, or may offer superior functionality or different features, than ours. In addition, many of our competitors operate and maintain their own fabrication facilities and have longer operating histories, greater name recognition, larger customer bases, and greater financial, sales, marketing and distribution resources than we do. These competitors may be able to more effectively identify and capitalize upon opportunities in new markets and end user customer trends, quickly transition their semiconductor products to increasingly smaller line width geometries and obtain sufficient foundry capacity and packaging materials, which could harm our business. If we are unable to successfully compete in our target markets or introduce new offerings in light of the competitive environment, our results of operations could suffer.

# If our products fail to achieve expected manufacturing yields, our financial results could be adversely impacted.

Manufacturing yields for our products are a function of product design, which is developed largely by us, and process technology, which typically is proprietary to the foundry. Low yields may result from either product design or process technology failure. We do not know whether a yield problem will exist until our design is actually manufactured by the foundry. As a result, yield problems may not be identified until well into the manufacturing process and require us and the foundry to cooperate to resolve the problem. Because of our potentially limited access to wafer foundry capacity, any decrease in manufacturing yields could result in higher manufacturing costs and require us to allocate our available product supply among our customers and partners. Lower than expected yields could harm customer or partner relationships and our financial results.