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

FORM 10-K

(Mark One)

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

For the fiscal year ended June 28, 2019

Or

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

For the transition period from __________ to __________

Commission file number: 1-8703

Western Digital®

WESTERN DIGITAL CORPORATION
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**33-0956711**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
5601 Great Oaks Parkway San Jose, California	**95119**
(Address of principal executive offices)	*(Zip Code)*

Registrant's telephone number, including area code: (408) 717-6000

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, $.01 Par Value Per Share	WDC	The Nasdaq Stock Market LLC (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 is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the registrant's common stock held by non-affiliates of the registrant on December 28, 2018, the last business day of the registrant's most recently completed second fiscal quarter, was $9.5 billion, based on the closing sale price as reported on the Nasdaq Global Select Market.

There were 296,003,875 shares of common stock, par value $0.01 per share, outstanding as of the close of business on August 14, 2019.

Documents Incorporated by Reference

Part III incorporates by reference certain information from the registrant's definitive proxy statement (the "Proxy Statement") for the 2019 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the end of the 2019 fiscal year. Except with respect to information specifically incorporated by reference in this Form 10-K, the Proxy Statement is not deemed to be filed as part hereof.

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Unless otherwise indicated, references herein to specific years and quarters are to our fiscal years and fiscal quarters, and references to financial information are on a consolidated basis. As used herein, the terms “we,” “us,” “our,” the “Company,” “WDC” and “Western Digital” refer to Western Digital Corporation and its subsidiaries, unless we state, or the context indicates, otherwise.

WDC, a Delaware corporation, is the parent company of our data storage business. Our principal executive offices are located at 5601 Great Oaks Parkway, San Jose, California 95119. Our telephone number is (408) 717-6000.

Western Digital, the Western Digital logo, G-Technology, SanDisk and WD are registered trademarks or trademarks of Western Digital or its affiliates in the U.S. and/or other countries. All other trademarks, registered trademarks and/or service marks, indicated or otherwise, are the property of their respective owners.

FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements within the meaning of the federal securities laws. Any statements that do not relate to historical or current facts or matters are forward-looking statements. You can identify some of the forward-looking statements by the use of forward-looking words, such as "may," "will," "could," "would," "project," "believe," "anticipate," "expect," "estimate," "continue," "potential," "plan," "forecast," and the like, or the use of future tense. Statements concerning current conditions may also be forward-looking if they imply a continuation of current conditions. Examples of forward-looking statements include, but are not limited to, statements concerning:

- *expectations regarding our Flash Ventures joint venture with Toshiba Memory Corporation, the flash industry and our flash wafer output plans;*
- *our cost and expense reduction actions;*
- *our quarterly cash dividend policy and share repurchase program;*
- *expectations regarding our product development and technology plans;*
- *expectations regarding our future results of operations;*
- *expectations regarding the outcome of legal proceedings in which we are involved;*
- *expectations regarding the repatriation of funds from our foreign operations;*
- *our beliefs regarding tax benefits and the timing of future payments, if any, relating to the unrecognized tax benefits, and the adequacy of our tax provisions;*
- *expectations regarding capital investments and sources of funding for those investments; and*
- *our beliefs regarding the sufficiency of our available liquidity to meet our working capital, our debt and debt covenants, our dividend plans and our capital expenditure needs.*

Forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those expressed in the forward-looking statements. You are urged to carefully review the disclosures we make concerning risks and other factors that may affect our business and operating results, including those made in Part I, Item 1A of this Annual Report on Form 10-K, and any of those made in our other reports filed with the Securities and Exchange Commission. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this document. We do not intend, and undertake no obligation, to publish revised forward-looking statements to reflect events or circumstances after the date of this document or to reflect the occurrence of unanticipated events.

PART I

Item 1. *Business*

General

Western Digital Corporation ("Western Digital") is a leading developer, manufacturer, and provider of data storage devices and solutions that address the evolving needs of the information technology ("IT") industry and the infrastructure that enables the proliferation of data in virtually every other industry. We create environments for data to thrive. We are driving the innovation needed to help customers capture, preserve, access and transform an ever-increasing diversity of data. Everywhere data lives, from advanced data centers to mobile sensors to personal devices, our industry-leading solutions deliver the possibilities of data.

Our broad portfolio of technology and products address the following key end markets: Client Devices; Data Center Devices and Solutions; and Client Solutions. We also generate license and royalty revenue from our extensive intellectual property ("IP"), which is included in each of these three end market categories.

Founded in 1970 in Santa Ana, California and now headquartered in San Jose, California, Western Digital has one of the technology industry's most valuable patent portfolios with more than 14,000 patents awarded worldwide. Since 2009, we have been a Standard & Poor's 500 ("S&P 500") company. We have a rich heritage of innovation and operational excellence, a wide range of IP assets and broad research and development ("R&D") capabilities. The unabated growth and value of data continues, creating a global need for a larger and more capable storage infrastructure. Our devices and solutions are made using either rotating magnetic technology, hard disk drives ("HDD"), or semiconductor technology, referred to as flash-based memory ("flash"). We continue to transform ourselves to address this growth by providing the broadest range of storage technologies in the industry with a comprehensive product portfolio and global reach.

We enable cloud service providers to build more powerful, cost effective and efficient data centers. We have relationships with the full range of original equipment manufacturers ("OEM") and data center customers currently addressing storage opportunities, such as storage subsystem suppliers, major server OEMs, Internet and social media infrastructure players, and personal computer ("PC") and Mac™ OEMs. We have also built strong consumer brands by providing effective tools to manage fast-accumulating libraries of personal content. We market our products primarily under the HGST, SanDisk and WD brands. Our products are sold through distribution, retail and direct channels worldwide. We are a vertically integrated company with deep capabilities to transform disk drive and flash-based components into products and solutions. We operate a series of joint ventures with Toshiba Memory Corporation ("TMC") that provide us with industry leading flash-based memory wafers that we use in our products (see "Ventures with Toshiba Memory" Section below).

We are well positioned to capitalize on the ongoing expansion in digital content generation and management. This fundamental trend is linked directly to commercial enterprises' and consumers' need for data storage and extraction of value from the data. The ways in which people and organizations are creating and using data are changing and the amount of data considered useful to store is expanding. More digital content is being stored and managed in a cloud environment on both HDDs and flash-based solid state drives ("SSDs"). With a focus on innovation and value creation, our goal is to grow through strong execution and targeted investments in data center infrastructure, mobility and the cloud.

Industry

We operate in the data storage and data management industry. Our devices and solutions provide a broad range of reliability, performance, storage capacity and data retention capabilities to our customers. The ability to capture and create value through the use of data analytics is increasingly important to our customers. In a connected global marketplace, across the data infrastructure, there has been a proliferation in the methods by and the rates at which content is generated, accessed, transformed, consumed and stored by end users. When combined with fast global networks, these trends create tremendous need for cost effective, high-performance and/or high-capacity storage solutions in edge and end-point use cases such as mobile, computing and consumer electronic devices, as well as in a wide range of storage systems, servers and data centers.

The growth in computing complexity, cloud computing applications, connected mobile devices and Internet connected products is driving unabated growth in the volume of digital content to be stored. This growth has led to a creation of new form factors for data storage. The storage industry is increasingly utilizing tiered architectures with HDDs, SSDs and other non-volatile memory-based storage to address an expanding set of uses and applications. We continuously monitor the advantages, disadvantages and advances of the full array of storage technologies, including reviewing these technologies with our customers, to ensure we are appropriately resourced to meet our customers' storage needs. Storage solutions that hold large amounts of data are key enablers of the trends seen in the evolution of a data driven economy, underpinned by the increase of digital content creation, consumption and monetization. Our investments in a range of early stage companies made possible through Western Digital Capital Global enables us to monitor and lead key trends within our ecosystem.

We are a market and customer driven company, focused on growth, technology, innovation and value creation for our customers, employees and shareholders. We develop deep and collaborative relationships with our customers with a goal of enabling their continued success, an approach that has made us a trusted business partner in our served markets. As our portfolio of storage solutions expands further, we believe our customer engagement approach is one of the key factors that will help us continue to achieve strong financial performance over the long term. We continue to evolve our customer engagement and go-to-market model to address changing customer and market needs. We are well positioned to expand our value-creation model within an evolving and growing storage ecosystem with our diversified product platform and unique competitive advantages.

Competition

Our industry is highly competitive. We compete with manufacturers of HDDs and flash-based memory for client devices and solutions, and data center devices and solutions. In HDD, we compete with Seagate Technology plc and Toshiba Electronic Devices & Storage Corporation. In flash, we compete with vertically integrated suppliers such as Intel Corporation, Micron Technology, Inc., Samsung Electronics Co., Ltd., SK hynix, Inc., TMC and numerous smaller companies that assemble flash into products.

Business Strategy

Our overall strategy is to leverage our technology, innovation and execution capabilities to be an industry-leading and broad-based developer, manufacturer and provider of storage devices and solutions that support the infrastructure that has enabled the unabated proliferation of data. We believe we are the only company in the world with large-scale capabilities to develop and manufacture a portfolio of integrated data storage solutions that are based on both rotating magnetic and flash memory technologies. We strive to successfully execute our strategy through the following foundational elements in order to deliver the best outcome for our customers, partners, investors and employees:

- *Technology Leadership:* We continue to innovate and develop advanced technologies across platforms for both HDD and flash to deliver timely new products and solutions to meet growing demands for scale, performance and cost efficiency in the market.
- *Broad Product Portfolio:* We leverage our capabilities in firmware, software and systems in both HDD and flash to deliver compelling and differentiated integrated storage solutions to our customers that offer the best combinations of performance, cost, power consumption, form factor, quality and reliability, while creating new use cases for our solutions in emerging markets.
- *Operational Excellence:* We are focused on delivering the best value for our customers in data center, client and consumer markets through a relentless focus on appropriately scaling our operations across both HDD and flash technologies to efficiently support business growth, achieving best in class cost, quality and cycle-time, maintaining industry leading manufacturing capabilities, and having a competitive advantage in supply-chain management.

Our strategy provides the following benefits, which distinguish us in the dynamic and competitive data storage industry:

- differentiates us as the leading developer and manufacturer of integrated products and solutions based on both HDD and flash, making us a more strategic supply partner to our large-scale customers who have storage needs across the data infrastructure ecosystem;
- enables scaling for efficiency and flexibility, allowing us to leverage our HDD and flash R&D and capital expenditures to deliver storage solutions to multiple markets;

- results in continued diversification of our HDD and flash storage solutions portfolio and entry into additional growing adjacent markets; and
- allows us to achieve strong financial performance, including healthy cash generation, thereby enabling organic and inorganic business investments and return of cash to shareholders.

Data Storage Solutions

We offer a broad line of data storage solutions to meet the evolving storage needs of end markets which include the following:

Client Devices

Client Devices consist of HDDs and SSDs for computing devices, such as desktop and notebook PCs, security surveillance systems, gaming consoles and set top boxes; flash-based embedded storage products for mobile phones, tablets, notebook PCs and other portable and wearable devices, automotive, Internet of Things (“IoT”), industrial and connected home applications; and flash-based memory wafers and components. Our HDDs and SSDs are designed for use in devices requiring high performance, reliability and capacity with various attributes such as low cost per GB, quiet acoustics, low power consumption and protection against shocks. Our embedded storage include custom embedded solutions and embedded flash products, such as our multi-chip package (“MCP”) solutions that combine flash-based and mobile dynamic random-access memory (“DRAM”) in an integrated package.

Data Center Devices and Solutions

Data Center Devices and Solutions consist of high-capacity enterprise HDDs and high-performance enterprise SSDs, data center software and system solutions. Our capacity enterprise helium hard drives provide high capacity storage needs and low total cost of ownership benefits for the growing cloud data center market. Our high-performance enterprise class SSDs include high-performance flash-based SSDs and software solutions which are optimized for performance applications providing a range of capacity and performance levels primarily for use in enterprise servers, supporting high volume on-line transactions, data analysis and other enterprise applications. Our data center solutions also include a wide range of high-capacity HDDs and drive configurations which provide enterprise class reliability at the lowest cost per gigabyte (“GB”). These drives are primarily for use in data storage systems, in tiered storage models and where data must be stored reliably for years. Our system solutions provide petabyte scalable capacity with high performance at compelling economics. We also provide higher value data storage platforms and systems to the market through our vertically integrated scale-out object storage active archive systems.

Client Solutions

Client Solutions consist of HDDs and SSDs embedded into external storage products and removable flash-based products, which include cards, universal serial bus (“USB”) flash drives and wireless drives. Our external HDD storage products in both mobile and desktop form factors provide affordable, high quality, reliable storage for backup and capacity expansion that are designed to keep digital content secure. We offer client portable SSDs with a range of capacities and performance characteristics to address a broad spectrum of the client storage market. Our removable cards are designed primarily for use in consumer devices, such as mobile phones, tablets, imaging systems, still cameras, action video cameras and security surveillance systems. Our USB flash drives are used in the computing and consumer markets and are designed for high-performance and reliability. Our wireless drive products allow in-field back up of created content, as well as wireless streaming of high-definition movies, photos, music and documents to tablets, smartphones and PCs.

Technology

Rotating Magnetic Storage

HDDs provide non-volatile data storage based on the recording of magnetic information on a rotating disk. We have successfully developed and commercialized HDDs that operate in an enclosed helium environment, instead of air, delivering industry leading HDD capacity and performance attributes. Our improvements in HDD capacity, which lower product costs over time, have been enabled largely through advancements in recording head and magnetic media technology. We develop and manufacture substantially all of the recording heads and magnetic media used in our hard drive products. We invest considerable resources in R&D, manufacturing infrastructure and capital equipment for recording head and media technology, as well as other aspects of the magnetic recording system such as HDD mechanics, controller and firmware technology, in order to secure our competitive position and cost structure. In 2018, we announced the world's first microwave-assisted magnetic recording ("MAMR") HDD - a breakthrough in innovation for delivering ultra-high capacity HDDs to meet the future demands of Big Data with proven data center-level reliability.

Solid State Storage

Solid state storage products provide non-volatile data storage based on flash technology. We develop and manufacture solid state storage products in different form factors for a variety of different markets, including enterprise or cloud storage, client storage, automotive, mobile devices and removable memory devices.

Our solid state storage products utilize our captive flash-based technology which we develop and manufacture through our business ventures with TMC. We devote significant research and development resources to the development of highly reliable, high-performance, cost-effective flash-based technology. Over time, we have successfully developed and commercialized an increased number of storage bits per cell in an increasingly smaller form factor, further driving cost reductions. Following our introduction and commercialization in 2018 of products based on 4-bits-per-cell architectures ("QLC technology") and on 3-dimensional flash technology ("3D NAND"), which we refer to as BiCS3, we started shipping products based on QLC and BiCS4 technologies in 2019. BiCS4 QLC technology delivers an industry-leading storage capacity of 1.33 terabits on a single chip. In addition, we implemented our advanced UFS and e.MMC interface in a new portfolio of advanced embedded flash drives to empower smartphone users to unlock the full potential of today's data-driven applications and experiences. We also provide a range of embedded storage solutions for customers developing high-end, highly demanding, and data-intensive automotive applications.

We expect to develop and commercialize additional generations of 3D NAND technologies over the next several years while continuing to utilize our older technology for certain markets and applications.

We are leveraging our expertise, resources and strategic investments in non-volatile memories to explore a wide spectrum of persistent memory and storage class memory technologies. We have also initiated, defined and developed standards to meet new market needs and to promote wide acceptance of flash storage standards through interoperability and ease-of-use.

Our products generally leverage a common platform for various products within product families, and in some cases across product families, resulting in the commonality of components which reduces our exposure to changes in demand, facilitates inventory management and allows us to achieve lower costs through purchasing economies. This platform strategy also enables our customers to leverage their qualification efforts onto successive product models. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Research and Development

We devote substantial resources to the development of new products and the improvement of existing products. We focus our engineering efforts on coordinating our product design and manufacturing processes to bring our products to market in a cost-effective and timely manner. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Patents, Licenses and Proprietary Information

We rely on a combination of patents, trademarks, copyright and trade secret laws, confidentiality procedures and licensing arrangements to protect our IP rights.

We have more than 14,000 active patents worldwide and have many patent applications in process. We continually seek additional United States ("U.S.") and international patents on our technology. We believe that, although our active patents and patent applications have considerable value, the successful manufacturing and marketing of our products also depends upon the technical and managerial competence of our staff. Accordingly, the patents held and applied for cannot alone ensure our future success.

In addition to patent protection of certain IP rights, we consider elements of our product designs and processes to be proprietary and confidential. We believe that our non-patented IP, particularly some of our process technology, is an important factor in our success. We rely upon non-disclosure agreements, contractual provisions and a system of internal safeguards to protect our proprietary information. Despite these safeguards, there is a risk that competitors may obtain and use such information. The laws of foreign jurisdictions in which we conduct business may provide less protection for confidential information than the laws of the U.S.

We rely on certain technology that we license from other parties to manufacture and sell our products. We believe that we have adequate cross-licenses and other agreements in place in addition to our own IP portfolio to compete successfully in the storage industry. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Manufacturing

We believe that we have significant know-how, unique product manufacturing processes, test and tooling, execution skills, human resources and training to continue to be successful and to grow our manufacturing operations as necessary. We strive to maintain manufacturing flexibility, high manufacturing yields, reliable products and high-quality components. The critical elements of our production of HDD and flash-based products are high-volume and utilization, low-cost assembly and testing, strict adherence to quality metrics and maintaining close relationships with our strategic component suppliers to access best-in-class technology and manufacturing capacity. We continually monitor our manufacturing capabilities to respond to the changing requirements of our customers and maintain our competitiveness and position as a data technology leader.

HDD and flash-based product manufacturing are complex processes involving the production and assembly of precision components with narrow tolerances and rigorous testing. The manufacturing processes involve a number of steps that are dependent on each other and occur in "clean room" environments that demand skill in process engineering and efficient space utilization to control the operating costs of these manufacturing environments. We continually evaluate our manufacturing processes in an effort to increase productivity, sustain and improve quality and decrease manufacturing costs. We continually evaluate which steps in the manufacturing process would benefit from automation and how automated manufacturing processes can improve productivity and reduce manufacturing costs.

Substantially all of our flash-based supply requirements for our flash-based products is obtained from our business ventures with TMC, which provide us with leading-edge, high-quality and low-cost flash memory wafers. This represents our captive supply and we are obligated to take our share of the output from these ventures or pay the fixed costs associated with that capacity. See "Ventures with Toshiba Memory" below for additional information. While substantially all of our flash memory supply utilized for our products is purchased from these ventures, from time-to-time, we also purchase flash memory from other flash manufacturers, which we refer to as non-captive. While we do not unilaterally control the operations of our ventures with TMC, we believe that our business venture relationship with TMC helps us to reduce the costs of producing our products, increases our ability to control the quality of our products and speeds delivery of our products to our customers. Our vertically integrated manufacturing operations for our flash-based products are concentrated in three locations, with our business ventures with TMC located in Yokkaichi, Japan, and our in-house assembly and test operations located in Shanghai, China and Penang, Malaysia.

We also leverage the efficiencies of contract manufacturers when strategically advantageous. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Materials and Supplies

HDD consists primarily of recording heads, magnetic media and a printed circuit board assembly. We design and manufacture substantially all of the recording heads and magnetic media required for our products. As a result, we are more dependent upon our own development and execution efforts and less reliant on recording head and magnetic media technologies developed by other manufacturers. We depend on an external supply base for all remaining components and materials for use in our HDD product design and manufacturing.

Our flash-based products consist of flash memory, controllers and firmwares. Substantially all of our flash-based memory is supplied by our business ventures with TMC. Controllers are primarily designed in-house and manufactured by third-party foundries or acquired from third-party suppliers. We believe the use of our in-house assembly and test facilities, as well as contract manufacturers, provides flexibility and gives us access to increased production capacity. We have developed deep relationships with these vendors and TMC to establish continuous supply of flash-based memory and controllers.

We generally retain multiple suppliers for our component requirements but in some instances use sole or single sources for business or technology reasons. Currently, we believe that there are no major issues with component availability. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Ventures with Toshiba Memory

We and TMC currently operate three business ventures in 300-millimeter flash-based manufacturing facilities in Japan, which provide us leading-edge, cost-competitive flash-based memory wafers for our end products. Through Flash Partners Ltd., Flash Alliance Ltd., and Flash Forward Ltd., which we collectively refer to as Flash Ventures, we and TMC collaborate in the development and manufacture of flash-based memory wafers using semiconductor manufacturing equipment owned or leased by each of the Flash Venture entities. We hold a 49.9% ownership position in each of the Flash Venture entities. Each Flash Venture entity purchases wafers from TMC at cost and then resells those wafers to us and TMC at cost plus a mark-up. We are obligated to pay for variable costs incurred in producing our share of Flash Ventures' flash-based memory wafer supply, based on our three month forecast, which generally equals 50% of Flash Ventures' output. In addition, we are obligated to pay for half of Flash Ventures' fixed costs regardless of the output we choose to purchase. We are also obligated to fund 49.9% to 50% of Flash Ventures' capital investments to the extent that Flash Ventures' operating cash flow is insufficient to fund these investments. We and TMC also collaborate on certain R&D activities in support of Flash Ventures.

The agreements governing the operations of the Flash Venture entities also set out a framework for any investment by the joint venture partners in flash manufacturing capacity. Since its inception, Flash Ventures has been based in a manufacturing site in Yokkaichi, Japan that is owned and operated by TMC. The Yokkaichi site currently includes five wafer fabrication facilities, the newest of which is known as "Y6." We have jointly invested, and intend to continue to jointly invest, with TMC in manufacturing equipment for Y6. In May 2019, we entered into additional agreements to extend Flash Ventures to a new wafer fabrication facility, known as "K1." K1 is currently under construction at a site in Kitakami, Iwate, Japan that is operated by Toshiba Memory Corporation Iwate, a wholly owned subsidiary of TMC. As with Y6, the primary purpose of K1 is to provide clean room space to continue the transition of existing flash-based wafer capacity to newer technology nodes.

For a discussion of risks associated with our business ventures with TMC, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Sales and Distribution

We maintain sales offices in selected parts of the world including the major geographies of the Americas, Asia Pacific, Europe and the Middle East. Our international sales, which include sales to foreign subsidiaries of U.S. companies but do not include sales to U.S. subsidiaries of foreign companies, represented 78%, 78% and 80% of our net revenue for 2019, 2018 and 2017, respectively. Sales to international customers are subject to certain risks not normally encountered in domestic operations, including exposure to tariffs and various trade regulations. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

We perform our marketing and advertising functions internally and through outside firms utilizing both consumer media and trade publications targeting various reseller and end-user categories. We also maintain customer relationships through direct communication and by providing information and support through our website. In accordance with standard storage industry practice, we provide distributors and retailers with limited price protection and programs under which we reimburse certain marketing expenditures. We also provide distributors, resellers and OEMs with other sales incentive programs. While these groups of customers make up our end markets, some of these customers cross into multiple groups. We define these customers as follows:

Original Equipment Manufacturers. OEMs, including large-scale data center operators, system integrators and cloud customers who bundle, embed, or integrate our storage solutions, purchase our products either directly or through a contract manufacturer such as an original design manufacturer and assemble them into the devices they build. OEMs typically seek to qualify two or more providers for each generation of products and generally will purchase products from those vendors for the life of that product. Many of our OEM customers utilize just-in-time inventory management processes. As a result, for certain OEMs, we maintain a base stock of finished goods inventory in facilities located near or adjacent to the OEM's operations. In addition, we sell directly to cloud infrastructure players as well as flash storage solutions to customers that offer our products under their own brand name in the retail market, which we also classify as OEMs.

Distributors. We use a broad group of distributors to sell our products to non-direct customers such as small computer and consumer electronics ("CE") manufacturers, dealers, value-added resellers, systems integrators, online retailers and other resellers. Distributors generally enter into non-exclusive agreements with us for the purchase and redistribution of our products in specific territories.

Retailers. We sell our branded products directly to a select group of major retailers such as computer superstores, warehouse clubs, online retailers and computer electronics stores, and authorize sales through distributors to smaller retailers. The retail channel complements our other sales channels while helping to build brand awareness for us and our products. We also sell our branded products through our websites.

For each of 2019, 2018 and 2017, no single customer accounted for 10% or more of our net revenue. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K. For additional information regarding revenue recognition and major customers, see Part II, Item 8, Note 1, *Organization and Basis of Presentation* and Note 10, *Business Segment, Revenue Information, Geographic Information and Concentration of Risk*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Backlog

A substantial portion of our orders are generally for shipments within 60 days of the placement of the order. Customers' purchase orders may be canceled with relatively short notice to us, with little or no cost to the customer, or modified by customers to provide for delivery at a later date. In addition, for many of our OEMs utilizing just-in-time inventory, we do not generally require firm order commitments and instead receive a periodic forecast of requirements. Therefore, backlog information as of the end of a particular period is not necessarily indicative of future levels of our revenue and profit and may not be comparable to prior periods.

Seasonality

We have historically experienced seasonal fluctuations in our business with higher levels of demand in the first and second quarters of our fiscal year as a result of increased customer spending. Seasonality can also be impacted by the growth in emerging markets and macroeconomic conditions. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Service and Warranty

We generally warrant our newly manufactured products against defects in materials and workmanship from one to five years from the date of sale depending on the type of product, with a small number of products having a warranty ranging up to ten years or more. Our warranty obligation is generally limited to repair or replacement. We have engaged third parties in various countries in multiple regions to provide various levels of testing, processing, or recertification of returned products for our customers. For additional information regarding our service and warranty policy, see Part II, Item 8, Note 1, *Organization and Basis of Presentation* and Note 3, *Supplemental Financial Statement Data,* of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Environmental Regulation

We are subject to a variety of U.S. and foreign laws and regulations in connection with our operations and relating to the protection of the environment, including those governing discharges of pollutants into the air and water, the management and disposal of hazardous substances and the clean-up of contaminated sites. Some of our operations require environmental permits and controls to prevent and reduce air and water pollution. These permits are subject to modification, renewal and revocation by issuing authorities. We believe that we have obtained or are in the process of obtaining all necessary environmental permits for our operations.

We have established environmental management systems and continually update our environmental policies and standard operating procedures for our operations worldwide. We believe that our operations are in material compliance with applicable environmental laws, regulations and permits. We budget for operating and capital costs on an ongoing basis to comply with environmental laws.

Our properties have in some cases been operated for many years and may contain soil or groundwater contamination. In certain of our facilities we are undertaking voluntary monitoring of soil and groundwater. Based on available information, including our voluntary monitoring activities, we do not believe that we have a current affirmative legal obligation for any remedial action.

For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Employees

As of June 28, 2019, we employed a total of approximately 61,800 employees worldwide, excluding temporary employees and contractors. Many of our employees are highly skilled and our continued success depends in part upon our ability to attract and retain such employees. Accordingly, we offer employee benefit programs that we believe are, in the aggregate, competitive with those offered by our competitors.

While the substantial majority of our employees are not party to a collective bargaining agreement, a majority of our employees in Japan and China are subject to collective bargaining agreements. We consider our employee relations to be good. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Corporate Responsibility and Sustainability

We believe responsible and sustainable business practices support our long-term success. As a company, we are deeply committed to protecting and supporting our people, our environment, and our communities. That commitment is reflected through sustainability-focused initiatives as well as day-to-day activities, including our adoption of sustainability-focused policies and procedures, our publicly-recognized focus on fostering an inclusive workplace, our constant drive toward more efficient use of materials and energy, our careful and active management of our supply chain, our community-focused volunteerism programs and philanthropic initiatives, and our impactful, globally-integrated ethics and compliance program.

- We seek to protect the human rights and civil liberties of our employees through policies, procedures, and programs that avoid risks of compulsory and child labor, both within our company and throughout our supply chain.
- We foster a workplace of dignity, respect, diversity, and inclusion through our recruiting and advancement practices, internal communications, and employee resource groups.
- We educate our employees annually on relevant ethics and compliance topics, publish accessible guidance on ethical issues and related company resources in our Global Code of Conduct, and encourage reporting of ethical concerns through any of several global and local reporting channels.
- We support local communities throughout the world, focusing on hunger relief, environmental quality, and STEM (science, technology, engineering, and math) education, especially for underrepresented and underprivileged youth.
- We utilize a robust integrated management system, with associated policies and procedures, to evaluate and manage occupational health and safety risks, environmental compliance, and chemical and hazardous substance risks.
- We innovate to reduce the energy used by our products, the energy used to manufacture them, and the amount of new materials required to manufacture them.

Available Information

We maintain an Internet website at *www.wdc.com*. The information on our website is not incorporated in this Annual Report on Form 10-K. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, are available on our website at *www.wdc.com*, free of charge, as soon as reasonably practicable after the electronic filing of these reports with, or furnishing of these reports to, the Securities and Exchange Commission ("SEC"). The SEC maintains a website at *www.sec.gov* that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC, including us.

Item 1A.*Risk Factors*

Our business, financial condition and operating results can be affected by a number of risks and uncertainties, whether currently known or unknown, any one or more of which could, directly or indirectly, cause our actual results of operations and financial condition to vary materially from past, or from anticipated future, results of operations and financial condition. The risks and uncertainties discussed below are not the only ones facing our business, but represent risks and uncertainties that we believe are material to us. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also adversely affect our business, financial condition, results of operations or the market price of our common stock.

Adverse global or regional conditions could harm our business, results of operations and financial condition.

A large portion of our revenue is derived from our international operations, and many of our products and components are produced overseas. As a result, our business, results of operations and financial condition depend significantly on global and regional conditions. Adverse changes in global or regional economic conditions, including, but not limited to, volatility in the financial markets, tighter credit, slower growth in certain geographic regions, political uncertainty, other macroeconomic factors, and changes to policies, rules and regulations, could significantly harm demand for our products, increase credit and collectability risks, result in revenue reductions, increase manufacturing and operating costs or result in impairment charges or other expenses.

Our revenue and future growth are significantly dependent on the growth of international markets, and we may face difficulties in entering or maintaining international sales markets. We are subject to risks associated with our global manufacturing operations and global marketing and sales efforts, as well as risks associated with our utilization of and reliance on contract manufacturers, including:

- obtaining requisite governmental permits and approvals, compliance with foreign laws and regulations and changes in foreign laws and regulations;
- the need to comply with regulations on international business, including the Foreign Corrupt Practices Act, the United Kingdom Bribery Act 2010, the anti-bribery laws of other countries and rules regarding conflict minerals;
- copyright levies or similar fees or taxes imposed in European and other countries;
- exchange, currency and tax controls and reallocations;
- weaker protection of IP rights;
- trade restrictions, such as export controls, export bans, embargoes, sanctions, license and certification requirements (including on encryption technology), new or increased tariffs and fees and complex customs regulations; and
- difficulties in managing international operations, including appropriate internal controls.

As a result of these risks, our business, results of operations or financial condition could be adversely affected.

We rely substantially on our business ventures with Toshiba Memory Corporation ("TMC") for the development and supply of flash-based memory, which subjects us to risks and uncertainties that could harm our business, financial condition and operating results.

We depend on our ventures with TMC to develop and manufacture our flash-based memory. We partner with TMC on the development of flash-based technology, including future generations of 3D NAND, as well as other non-volatile memory technology in support of Flash Ventures. Flash Ventures is subject to various risks that could harm the value of our investments, our revenue and costs, our future rate of spending, our technology plans and our future growth opportunities.

Substantially all of our flash-based memory is supplied by Flash Ventures, which limits our ability to respond to market demand and supply changes. A failure to accurately forecast demand could cause us to over-invest or under-invest in technology transitions or the expansion of Flash Ventures' capacity. Over-investment by us or our competitors could result in excess supply, which could cause significant decreases in our product prices, significant excess, obsolete inventory or inventory write-downs or under-utilization charges, and the potential impairment of our investments in Flash Ventures. On the other hand, if we under-invest in Flash Ventures or otherwise grow or transition Flash Ventures' capacity more slowly than we expect or than the rest of the industry, we may not have enough supply of the right type of memory or at all to meet demand on a timely and cost effective basis and we may lose opportunities for revenue, gross margin and market share as a result. If our supply is limited, we may make strategic decisions with respect to the allocation of our supply among our products and customers, and these strategic allocation decisions may result in less favorable gross margin or damage certain customer relationships. We are contractually obligated to pay for 50% of the fixed costs of Flash Ventures regardless of whether we purchase any wafers from Flash Ventures. Furthermore, purchase orders placed with Flash Ventures and under the foundry arrangements with TMC for up to three months are binding and cannot be canceled. Therefore, once our purchase decisions have been made, our production costs for flash memory are fixed, and we may be unable to reduce costs to match any subsequent declines in pricing or demand, which would harm our gross margin. Our limited ability to react to fluctuations in flash memory supply and demand makes our financial results particularly susceptible to variations from our forecasts and expectations.

Under the Flash Ventures agreements, we have limited power to unilaterally direct most of the activities that most significantly impact Flash Ventures' performance and we have limited ability to source or fabricate flash-based memory outside of Flash Ventures. Lack of alignment with TMC with respect to Flash Ventures could adversely impact our ability to stay at the forefront of technological advancement and our investment in Flash Ventures and otherwise harm our business. Misalignment could arise due to changes in TMC's strategic priorities and/or ownership, which has changed significantly recently and could continue to change. TMC's stakeholders may include, or have included in the past, flash and HDD competitors, customers, a private equity firm and a bank owned by the Government of Japan. TMC's ownership and capital structure could lead to delays in decision-making, disputes, or changes in strategic direction that could adversely impact Flash Ventures and/or adversely affect our business prospects, results of operations and financial condition. There may exist conflicts of interest between TMC's stakeholders and Flash Ventures or us with respect to, among other things, protecting and growing Flash Ventures' business, IP and competitively sensitive confidential information.

Flash Ventures requires significant investments by both TMC and us for technology transitions, including the transition to 3D NAND, and capacity expansions. TMC's parent company, Toshiba Memory Holdings Corporation ("TMHC"), recently announced new financing in the amount of 1.2 trillion Japanese yen. TMHC's financing agreements and/or its high level of debt could limit TMC's ability to timely fund or finance investments in Flash Ventures or our joint development efforts, as well as limit Flash Ventures' ability to enter into lease financings. To the extent that lease financings for Flash Ventures are not accessible on favorable terms or at all, more cash would be required to fund investments. If TMC does not or we do not provide sufficient resources, or have adequate access to credit, to timely fund investments in Flash Ventures, our investments could be delayed or reduced. Delayed or reduced investment in manufacturing capacity or R&D could harm Flash Ventures' competitiveness and/or our investment in Flash Ventures. In addition, TMHC's financing arrangements might be secured by TMC's equity interests in Flash Ventures, permitting the lenders to foreclose on those equity interests under certain circumstances.

In May 2019, we entered into definitive agreements with TMC regarding a new 3D NAND wafer fabrication facility in Kitakami, Iwate, Japan, known as "K1." Under the K1 agreement, we agreed to, among other things, fund 50% of K1's initial production line. Output from the initial production line, which is expected in the first half of calendar year 2020, could be delayed, reduced or otherwise fail to meet our expectations. As K1 is located at a new manufacturing site, K1 could be particularly susceptible to delays and other challenges in the production ramp and yields, qualification of wafers, shipment of samples to customers and customer approval process. Further, although we intend to continue to jointly invest with TMC to ramp up manufacturing capacity at K1, there is no certainty as to when, and on what terms, we will do so. If and for so long as our share of the K1 capacity falls below a specified threshold, we will be responsible for bearing fixed costs associated with K1's operations at that threshold, which could adversely affect our financial results.

We participate in a highly competitive industry that is subject to declining average selling prices ("ASPs"), volatile demand, rapid technological change and industry consolidation, all of which could adversely affect our operating results and financial condition.

Demand for our devices, software and solutions that we offer to our customers, which we refer to in this Item 1A as our "products", depends in large part on the demand for systems (including personal computers ("PCs") and mobile devices) manufactured by our customers and on storage upgrades to existing systems. The demand for systems has been volatile in the past and often has had an exaggerated effect on the demand for our products in any given period. The prices of our products are influenced by, among other factors, the balance between supply and demand in the storage market, including the effects of new fab capacity, macroeconomic factors, business conditions, technology transitions and other actions taken by us or our competitors. The storage market has experienced volatile product life cycles, which can adversely affect our ability to recover the cost of product development, and periods of excess capacity, which can lead to liquidation of excess inventories, significant reductions in ASPs and adverse impacts on our revenue and gross margins.

Further, our ASPs and gross margins tend to decline when there is a shift in the mix of product sales, and sales of lower priced products increase relative to those of higher priced products. Further, we face potential gross margin pressures resulting from our ASPs declining more rapidly than our cost of revenue. Rapid technological changes often reduce the volume and profitability of sales of existing products and increase the risk of inventory obsolescence. Finally, the data storage industry has experienced consolidation over the past several years. Further consolidation across the industry could enhance the capacity, abilities and resources and lower the cost structure of some of our competitors, causing us to be at a competitive disadvantage. These factors may result in significant shifts in market share among the industry's major participants, including a substantial decrease in our market share, all of which could adversely impact our operating results and financial condition.

In addition, we compete based on our ability to offer our customers competitive solutions that provide the most current and desired products and service features. As we compete in new product areas, the overall complexity of our business may increase at an accelerated rate and may result in increases in R&D expenses and substantial investments in manufacturing capability, technology enhancements and go-to-market capability. We must also qualify our products with customers through potentially lengthy testing processes, which may result in delayed, reduced or lost product sales. Some of our competitors offer products and technologies that we do not offer and may be able to use their broader product and technology portfolio to win sales from us, and some of our customers may be developing storage solutions internally, which may reduce their demand for our products. We expect that competition will continue to be intense, and there is a risk that our competitors may be able to gain a product offering or cost structure advantage over us, which may result in a loss of business to us. Further, some of our competitors may utilize certain pricing strategies, including offering products at prices at or below cost, that we may be unable to competitively match. We may also have difficulty effectively competing with manufacturers benefitting from governmental investments.

If we do not properly manage technology transitions and product development and introduction, our competitiveness and operating results may be negatively affected.

The storage markets in which we offer our products continuously undergo technology transitions that we must anticipate and adapt our existing products or develop new products to address in a timely manner. If we fail to implement new technologies successfully, if we are slower than our competitors at implementing new technologies, or if our technology transitions or product development are more costly to complete than anticipated, we may not be able to offer products our customers desire and our costs may not remain competitive, which would harm revenues, our gross margin and operating results.

In addition, the success of our technology transitions and product development and introduction depends on a number of other factors, including:

- R&D expenses and results;
- difficulties faced in manufacturing ramp;
- market acceptance/qualification;
- effective management of inventory levels in line with anticipated product demand;

- the vertical integration of some of our products, which may result in more capital expenditures and greater fixed costs than if we were not vertically integrated;
- our ability to cost effectively respond to customer requests for new products or features and software associated with our products;
- our ability to increase our software development capability; and
- the effectiveness of our go-to-market capability in selling new products.

Moving to new technologies and products may require us to align to, and build, a new supply base. Our success in new product areas may be dependent in part on our ability to develop close relationships with new suppliers and on our ability to enter into favorable supply agreements. Where this cannot be done, our business and operations may be adversely affected. In addition, if our customers choose to delay transition to new technologies, if demand for the products that we develop is lower than expected or if the supporting technologies to implement these new technologies are not available, we may be unable to achieve the cost structure required to support our profit objectives or may be unable to grow or maintain our market position.

Additionally, new technologies and products could substitute for or replace our current technologies and products and make them obsolete. We also develop products to meet certain industry and technical standards, which may change. We could incur substantial costs as a result of shifts in technology and standards, such as adopting new standards or investing in different capital equipment or manufacturing processes to remain competitive.

For additional technology transition risks related to Flash Ventures, see the risk factor entitled "*We rely substantially on our business ventures with Toshiba Memory Corporation ("TMC") for the development and supply of flash-based memory, which subjects us to risks and uncertainties that could harm our business, financial condition and operating results.*"

Our strategic relationships subject us to risks that could adversely affect our business, financial condition and results of operations.

We have entered into strategic relationships with various partners for future product development, sales growth and the supply of technologies, components, equipment and materials for use in our product design and manufacturing, including our partnership with TMC for flash-based memory development and manufacturing. These strategic relationships are subject to various risks that could adversely affect the value of our investments and our results of operations and financial condition. These risks include, but are not limited to, the following:

- our interests could diverge from our partners' interests or we may not agree with co-venturers on ongoing activities, technology transitions or on the amount, timing or nature of further investments in the relationship;
- we may experience difficulties and delays in product and technology development at, ramping production at, and transferring technology to, our business ventures;
- our control over the operations of our business ventures is limited;
- due to financial constraints, our co-venturers may be unable to meet their commitments to us or may pose credit risks for our transactions with them;
- due to differing business models, financial constraints or long-term business goals, our partners may decide not to join us in funding capital investment by our business ventures, which may result in higher levels of cash expenditures by us or prevent us from proceeding in the investment;
- we may lose the rights to technology or products being developed by the strategic relationship, including if any of our co-venturers is acquired by another company or otherwise transfers its interest in the business venture, files for bankruptcy or experiences financial or other losses;
- a bankruptcy event involving a co-venturer could result in the early termination or adverse modification of the business venture or agreements governing the business venture;
- we may experience difficulties or delays in collecting amounts due to us from our co-venturers;

- the terms of our arrangements may turn out to be unfavorable; and
- changes in tax, legal or regulatory requirements may necessitate changes in the agreements with our co-venturers.

If our strategic relationships are unsuccessful or there are unanticipated changes in, or termination of, our strategic relationships, our business, results of operations and financial condition may be adversely affected.

***We are dependent on a limited number of qualified suppliers who provide critical materials or components, and a disruption in our supply chain, including a shortage in supply or a supplier's failure to support us in a timely manner with goods or services at a quality level and cost acceptable to us, or supplier consolidation, could adversely affect our margins, revenues and operating results*.**

We depend on an external supply base for technologies, software (including firmware), preamps, controllers, DRAM, components, equipment and materials for use in our product design and manufacturing. We also depend on suppliers for a portion of our wafer testing, chip assembly, product assembly and product testing, and on service suppliers for providing technical support for our products. In addition, we use logistics partners to manage our just-in-time hubs, distribution centers and freight from suppliers to our factories and from our factories to our customers throughout the world. Many of the components and much of the equipment we acquire must be specifically designed to be compatible for use in our products or for developing and manufacturing our future products, and are only available from a limited number of suppliers, some of whom are our sole-source suppliers. We are therefore dependent on these suppliers to be able and willing to dedicate adequate engineering resources to develop components that can be successfully integrated into our products, technology and equipment.

From time to time, our suppliers have experienced difficulty meeting our requirements. If we are unable to purchase sufficient quantities from our current suppliers or qualify and engage additional suppliers, or if we cannot purchase materials at a reasonable price, we may not be able to meet demand for our products. Trade restrictions, including tariffs, quotas and embargoes, demand from other high volume industries for materials or components used in our products or shortages in other components and materials used in our customers' products could result in increased costs to us or decreased demand for our products, which could negatively impact our operating results. Delays or cost increases experienced by our suppliers in developing or sourcing materials and components for use in our products or incompatibility or quality issues relating to our products, could also harm our financial results as well as business relationships with our customers.

We do not have long-term contracts with some of our existing suppliers, nor do we always have guaranteed manufacturing capacity with our suppliers and, therefore, we cannot guarantee that they will devote sufficient resources or capacity to manufacturing our products. Any significant problems that occur at our suppliers, or their failure to perform at the level we expect, could lead to product shortages or quality assurance problems, either of which would harm our operating results and financial condition. When we do have contractual commitments with component suppliers in an effort to increase and stabilize the supply of those components, those commitments may require us to buy a substantial number of components from the supplier or make significant cash advances to the supplier; however, these commitments may not result in a satisfactory increase or stabilization of the supply of such components and may cause us to have inadequate or excess component inventory, which could increase our operating costs and adversely affect our operating results.

In addition, our supply base has experienced industry consolidation. Our suppliers may be acquired by our competitors, consolidate, decide to exit the industry, or redirect their investments and increase costs to us, each of which may have an adverse effect on our business and operations. In addition, some of our suppliers have experienced a decline in financial performance. Where we rely on a limited number of suppliers or a single supplier, the risk of supplier loss due to industry consolidation or a decline in financial performance is enhanced. Some of our suppliers may also be competitors in other areas of our business, which could lead to difficulties in price negotiations or meeting our supply requirements. Any disruption in our supply chain could reduce our revenue and adversely impact our financial results.

Our operations, and those of certain of our suppliers and customers, are concentrated in large, purpose-built facilities, subjecting us to substantial risk of damage or loss if operations at any of these facilities are disrupted.

As a result of our cost structure and strategy of vertical integration, we conduct our operations at large, high volume, purpose-built facilities in California and throughout Asia. The facilities of many of our customers, our suppliers and our customers' suppliers are also concentrated in certain geographic locations throughout Asia and elsewhere. A fire, flood, earthquake, tsunami or other natural disaster, condition or event such as a power outage, terrorist attack, political instability, civil unrest, localized labor unrest or other employment issues, or a localized health risk that adversely affects any of these facilities, the employees, the technology infrastructure or logistics operators at these facilities, would significantly affect our ability to manufacture or sell our products and source components, which would result in a substantial loss of sales and revenue and a substantial harm to our operating results. In addition, the geographic concentration of our manufacturing sites could exacerbate the negative impacts resulting from any of these problems. A significant event that impacts any of our manufacturing sites, or the sites of our customers or suppliers, could adversely affect our ability to manufacture or sell our products, and our business, financial condition and results of operations could suffer.

We may incur losses beyond the limits of, or outside the scope of, the coverage of our insurance policies. There can be no assurance that in the future we will be able to maintain existing insurance coverage or that premiums will not increase substantially. Due to market availability, pricing or other reasons, we may elect not to purchase insurance coverage or to purchase only limited coverage. We maintain limited insurance coverage and, in some cases, no coverage at all, for natural disasters and environmental damages, as these types of insurance are sometimes not available or available only at a prohibitive cost. We depend upon TMC to obtain and maintain sufficient property, business interruption and other insurance for Flash Ventures. If TMC fails to do so, we could suffer significant unreimbursable losses, and such failure could also cause Flash Ventures to breach various financing covenants.

We experience sales seasonality and cyclicality, which could cause our operating results to fluctuate. In addition, accurately forecasting demand has become more difficult, which could adversely affect our business and financial results or operating efficiencies.

Sales of computer systems, mobile devices, storage subsystems, gaming consoles and consumer electronics tend to be seasonal and subject to supply-demand cycles, and therefore we expect to continue to experience seasonality and cyclicality in our business as we respond to variations in supply dynamics and customer demand. Changes in seasonal and cyclical supply and demand patterns have made it, and could continue to make it, more difficult for us to forecast demand, especially as a result of the current macroeconomic environment. Changes in the product or channel mix of our business can also impact seasonal and cyclical patterns, adding complexity in forecasting demand. Seasonality and cyclicality also may lead to higher volatility in our stock price. It is difficult for us to evaluate the degree to which seasonality and cyclicality may affect our stock price or business in future periods because of the rate and unpredictability of product transitions, actions by competitors, new product introductions and macroeconomic conditions.

The variety and volume of products we manufacture are based in part on accurately forecasting market and customer demand for our products. Accurately forecasting demand has also become increasingly difficult for us, our customers and our suppliers due to volatility in global economic conditions and industry consolidation, resulting in less availability of historical market data for certain product segments. Further, for many of our OEMs utilizing just-in-time inventory, we do not generally require firm order commitments and instead receive a periodic forecast of requirements, which may prove to be inaccurate. In addition, because our products are designed to be largely interchangeable with competitors' products, our demand forecasts may be impacted significantly by the strategic actions of our competitors. As forecasting demand becomes more difficult, the risk that our forecasts are not in line with demand increases. If our forecasts exceed actual market demand, we could experience periods of product oversupply, excess inventory, and price decreases, which could impact our sales, ASPs and gross margin, thereby adversely affecting our operating results and our financial condition. If market demand increases significantly beyond our forecasts or beyond our ability to add manufacturing capacity, then we may not be able to satisfy customer product needs, possibly resulting in a loss of market share if our competitors are able to meet customer demands. In addition, some of our components have long lead-times, requiring us to place orders several months in advance of anticipated demand. Such long lead-times increase the risk of excess inventory or loss of sales in the event our forecasts vary substantially from actual demand.

The loss of our key management, staff and skilled employees, the inability to hire and integrate new employees or decisions to realign our business could negatively impact our business prospects.

Our success depends upon the continued contributions of our key management, staff and skilled employees, many of whom would be extremely difficult to replace. Global competition for skilled employees in the technology related industry is intense, and our business success becomes increasingly dependent on our ability to retain our key staff and skilled employees, to implement succession plans for our key management and staff, to attract, integrate and retain new skilled employees, including employees from acquisitions, and to make decisions to realign our business to take advantage of efficiencies or reduce redundancies. Additionally, because a substantial portion of our key employees' compensation is placed "at risk" and linked to the performance of our business, including through equity compensation, when our operating results are negatively impacted, we may be at a competitive disadvantage for retaining and hiring key management, staff and skilled employees versus other companies that may pay a relatively higher portion of base compensation. If we are unable to hire and retain key management, staff or skilled employees, our operating results would likely be harmed.

If we fail to identify, manage, complete and integrate acquisitions, investment opportunities or other significant transactions, which are a key part of our growth strategy, it may adversely affect our future results.

We seek to be an industry-leading developer, manufacturer and provider of innovative storage solutions, balancing our core hard drive and flash memory business with growing investments in newer areas that we believe will provide us with higher growth opportunities. Acquisitions of, investment opportunities in, or other significant transactions with companies that are complementary to our business are a key part of our overall business strategy. In order to pursue this part of our growth strategy successfully, we must continue to identify attractive acquisition or investment opportunities, successfully complete the transactions, some of which may be large and complex, and manage post-closing issues such as integration of the acquired company or employees. We may not be able to continue to identify or complete appealing acquisition or investment opportunities given the intense competition for these transactions. Even if we identify and complete suitable corporate transactions, we may not be able to successfully address any integration challenges in a timely manner, or at all. There may be difficulties with implementing new systems and processes or with integrating systems and processes of companies with complex operations, which could result in inconsistencies in standards, controls, procedures and policies and may increase the risk that our internal controls are found to be ineffective. Failing to successfully integrate or realign our business to take advantage of efficiencies or reduce redundancies of an acquisition may result in not realizing all or any of the anticipated benefits of the acquisition. In addition, failing to achieve the financial model projections for an acquisition or changes in technology development and related roadmaps following an acquisition may result in the incurrence of impairment charges and other expenses, both of which could adversely impact our results of operations or financial condition. Acquisitions and investments may also result in the issuance of equity securities that may be dilutive to our shareholders and the issuance of additional indebtedness that would put additional pressure on liquidity. Furthermore, we may agree to provide continuing service obligations or enter into other agreements in order to obtain certain regulatory approvals of our corporate transactions, and failure to satisfy these additional obligations could result in our failing to obtain regulatory approvals or the imposition of additional obligations on us, any of which could adversely affect our business, financial condition and results of operations. In addition, new legislation or additional regulations may affect or impair our ability to invest with or in certain other countries or require us to obtain regulatory approvals to do so, including investments in joint ventures, minority investments and outbound technology transfers to certain countries.

Any cost saving initiatives, restructurings or divestitures that we undertake may result in disruptions to our operations and may not deliver the results we expect, which may adversely affect our business.

From time to time, we engage in cost saving initiatives, restructurings and divestitures that may result in workforce reduction and consolidation of our manufacturing or other facilities. As a result of these actions, we may experience a loss of continuity, loss of accumulated knowledge, disruptions to our operations and inefficiency during transitional periods. These actions could also impact employee retention. In addition, we cannot be sure that these actions will be as successful in reducing our overall expenses as we expect, that additional costs will not offset any such reductions or consolidations or that we do not forego future business opportunities as a result of these actions. If our operating costs are higher than we expect or if we do not maintain adequate control of our costs and expenses, our operating results could be adversely affected.

Our high level of debt may adversely impact our liquidity, restrict our operations and ability to respond to business opportunities, and increase our vulnerability to adverse economic and industry conditions.

As of June 28, 2019, our total indebtedness was $10.69 billion in aggregate principal, and we had $2.25 billion of additional borrowing availability under our revolving credit facility.

Our high level of debt could have significant consequences, which include, but are not limited to, the following:

- limiting our ability to obtain additional financing for working capital, capital expenditures, acquisitions or other general corporate purposes;
- requiring a substantial portion of our cash flows to be dedicated to debt service payments instead of other purposes;
- imposing financial and other restrictive covenants on our operations, including limiting our ability to (i) declare or pay dividends or repurchase shares of our common stock; (ii) purchase assets, make investments, complete acquisitions, consolidate or merge with or into, or sell all or substantially all of our assets to, another person; (iii) dispose of assets; (iv) incur liens; and (v) enter into transactions with affiliates; and
- making us more vulnerable to economic downturns and limiting our ability to withstand competitive pressures or take advantage of new opportunities to grow our business.

Our ability to meet the debt service obligations and to comply with our debt covenants depends on our cash flows and financial performance, which are affected by financial, business, economic and other factors. Failure to meet our debt service obligations or comply with our debt covenants could result in an event of default under the applicable indebtedness. We may be unable to cure, or obtain a waiver of, an event of default or otherwise amend our debt agreements to prevent an event of default thereunder on terms acceptable to us or at all. In that event, the debt holders could accelerate the related debt, which may result in the cross-acceleration or cross-default of other debt, leases or other obligations. We may not have sufficient funds available to repay accelerated indebtedness, and we may be required to refinance all or part of our debt, sell important strategic assets at unfavorable prices, incur additional indebtedness or issue common stock or other equity securities, which we may be unable to do on terms acceptable to us, in amounts sufficient to meet our needs or at all. Our inability to service our debt obligations or refinance our debt could have a material adverse effect on our business, operating results and financial condition. Further, if we are unable to repay, refinance or restructure our secured indebtedness, the holder of such debt could proceed against the collateral securing that indebtedness. Refinancing our indebtedness may also require us to expense previous debt issuance costs or to incur new debt issuance costs.

As our bank debt contains a variable interest rate component based on our corporate credit ratings, a decline in our ratings could result in increased interest rates and debt service obligations. In addition, our ratings impact the cost and availability of future borrowings and, accordingly, our cost of capital. Our ratings reflect the opinions of the ratings agencies as to our financial strength, operating performance and ability to meet our debt obligations. There can be no assurance that we will achieve a particular rating or maintain a particular rating in the future.

Our credit agreement uses LIBOR as a reference rate for our term loans and revolving credit facility, such that the applicable interest rate may, at our option, be calculated based on LIBOR. In July 2017, the U.K.'s Financial Conduct Authority, which regulates LIBOR, announced that it intends to phase out LIBOR by the end of 2021. In April 2018, the Federal Reserve Bank of New York began publishing a Secured Overnight Funding Rate, which is intended to replace U.S. dollar LIBOR. Plans for alternative reference rates for other currencies have also been announced. At this time, we cannot predict how markets will respond to these proposed alternative rates or the effect of any changes to LIBOR or the discontinuation of LIBOR. If LIBOR is no longer available or if our lenders have increased costs due to changes in LIBOR, we may experience potential increases in interest rates on our variable rate debt, which could adversely impact our interest expense, results of operations and cash flows.

We may from time to time seek to further refinance our substantial indebtedness by issuing additional shares of common stock, which may dilute our existing shareholders, reduce the value of our common stock, or both.

Tax matters may materially affect our financial position and results of operations.

Changes in tax laws in the United States, the European Union and around the globe have impacted and will continue to impact our effective worldwide tax rate, which may materially affect our financial position and results of operations. Further, organizations such as the Organization for Economic Cooperation and Development, have published action plans that, if adopted by countries where we do business, could increase our tax obligations in these countries. Due to the large scale of our U.S. and international business activities, many of these enacted and proposed changes to the taxation of our activities could increase our worldwide effective tax rate and harm our financial position and results of operations. Additionally, portions of our operations are subject to a reduced tax rate or are free of tax under various tax holidays that expire in whole or in part from time to time, or may be terminated if certain conditions are not met. Although many of these holidays may be extended when certain conditions are met, we may not be able to meet such conditions. If the tax holidays are not extended, or if we fail to satisfy the conditions of the reduced tax rate, then our effective tax rate could increase in the future.

Our determination of our tax liability in the U.S. and other jurisdictions is subject to review by applicable domestic and foreign tax authorities. For example, as disclosed in Part II, Item 8, Note 13, *Income Tax Expense,* of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K, we are under examination by the Internal Revenue Service for certain fiscal years and in connection with that examination, we received statutory notices of deficiency seeking certain adjustments to income and have filed petitions with the U.S. Tax Court. Although we believe our tax positions are properly supported, the final timing and resolution of any tax examinations are subject to significant uncertainty and could result in litigation or the payment of significant amounts to the applicable tax authority in order to resolve examination of our tax positions, which could result in an increase or decrease of our current estimate of unrecognized tax benefits and may negatively impact our financial position, results of operations or cash flows.

Sales in the distribution channel and to the retail market are important to our business, and if we fail to respond to demand changes within these markets, or maintain and grow our applicable market share, our operating results could suffer.

Our distribution customers typically sell to small computer manufacturers, dealers, systems integrators and other resellers. We face significant competition in this channel as a result of limited product qualification programs and a significant focus on price and availability of product. In addition, the PC market is experiencing a shift to notebook and other mobile devices and, as a result, more computing devices are being delivered to the market as complete systems, which could weaken the distribution market. If we fail to respond to changes in demand in the distribution market, our operating results could suffer. Additionally, if the distribution market weakens as a result of a slowing PC growth rate, technology transitions or a significant change in consumer buying preference, or if we experience significant price declines due to demand changes in the distribution channel, our operating results would be adversely affected. Negative changes in the credit-worthiness or the ability to access credit, or the bankruptcy or shutdown of any of our significant retail or distribution partners would harm our revenue and our ability to collect outstanding receivable balances.

A significant portion of our sales is also made through retailers. Our success in the retail market depends in large part on our ability to maintain our brand image and corporate reputation and to expand into and gain market acceptance of our products in multiple retail market channels. Particularly in the retail market, adverse publicity, whether or not justified, or allegations of product or service quality issues, even if false or unfounded, could damage our reputation and cause our customers to choose products offered by our competitors. If customers no longer maintain a preference for our product brands or if our retailers are not successful in selling our products, our operating results may be adversely affected.

Loss of market share with or by a key customer, or consolidation among our customer base, could harm our operating results.

During the fiscal year ended June 28, 2019, 45% of our revenue came from sales to our top 10 customers. These customers have a variety of suppliers to choose from and therefore can make substantial demands on us, including demands on product pricing and on contractual terms, often resulting in the allocation of risk to us as the supplier. Our ability to maintain strong relationships with our principal customers is essential to our future performance. We have experienced and may in the future experience events such as the loss of a key customer, prohibition or restriction of sales to a key customer by law, regulation or other government action, reductions in orders of our products by a key customer, customer requirements to reduce our prices before we are able to reduce costs or the acquisition of a key customer by one of our competitors. These events would likely harm our operating results and financial condition.

Additionally, if there is consolidation among our customer base, our customers may be able to command increased leverage in negotiating prices and other terms of sale, which could adversely affect our profitability. Consolidation among our customer base may also lead to reduced demand for our products, increased customer pressure on our prices, replacement of our products by the combined entity with those of our competitors and cancellations of orders, each of which could harm our operating results.

Also, the storage ecosystem is constantly evolving, and our traditional customer base is changing. Fewer companies now hold greater market share for certain applications and services, such as mobile, social media, shopping and streaming media. As a result, the competitive landscape is changing, giving these companies increased leverage in negotiating prices and other terms of sale, which could adversely affect our profitability. In addition, the changes in our evolving customer base create new selling and distribution patterns to which we must adapt. To remain competitive, we must respond to these changes by ensuring we have proper scale in this evolving market, as well as offer products that meet the technological requirements of this customer base at competitive pricing points. To the extent we are not successful in adequately responding to these changes, our operating results and financial condition could be harmed.

Our operating results fluctuate, sometimes significantly, from period to period due to many factors, which may result in a significant decline in our stock price.

Our quarterly operating results may be subject to significant fluctuations as a result of a number of other factors including:

- weakness in demand for one or more product categories;
- the timing of orders from and shipment of products to major customers or loss of major customers;
- our product mix;
- reductions in the ASPs of our products and lower margins;
- excess output, capacity or inventory, resulting in lower ASPs, financial charges or impairments, or insufficient output, capacity or inventory, resulting in lost revenue opportunities;
- inability to successfully implement technology transitions or other technology developments, or other failure to reduce product costs to keep pace with reduction in ASPs;
- manufacturing delays or interruptions;
- delays in design wins or customer qualifications, acceptance by customers of competing products in lieu of our products;
- variations in the cost of and lead times for components for our products, disruptions of our supply chain;
- increase in costs due to warranty claims; and
- higher costs as a result of currency exchange rate fluctuations.

We often ship a high percentage of our total quarterly sales in the third month of the quarter, which makes it difficult for us to forecast our financial results before the end of the quarter. As a result of the above or other factors, our forecast of operating results for the quarter may differ materially from our actual financial results. If our results of operations fail to meet the expectations of analysts or investors, it could cause an immediate and significant decline in our stock price.

If our technology infrastructure, systems or products are compromised, damaged or interrupted by cyber attacks, data security breaches, other security problems, design defects or sustain system failures, our operating results and financial condition could be adversely affected.

We experience cyber attacks of varying degrees on our technology infrastructure and systems and, as a result, unauthorized parties have obtained in the past, and may in the future obtain, access to our computer systems and networks, including cloud-based platforms. The technology infrastructure and systems of our suppliers, vendors, service providers, cloud solution providers and partners have in the past experienced and may in the future experience such attacks. Cyber attacks can include computer viruses, computer denial-of-service attacks, worms, and other malicious software programs or other attacks, covert introduction of malware to computers and networks, impersonation of authorized users, and efforts to discover and exploit any design flaws, bugs, security vulnerabilities or security weaknesses, as well as intentional or unintentional acts by employees or other insiders with access privileges, intentional acts of vandalism or fraud by third parties and sabotage. In some instances, efforts to correct vulnerabilities or prevent attacks may reduce the performance of our computer systems and networks, which could negatively impact our business. We believe cyber attack attempts are increasing in number and that cyber attackers are developing increasingly sophisticated systems and means to not only attack systems, but also to evade detection or to obscure their activities.

Our products are also targets for cyber attacks, including those products utilized in cloud-based environments as well as our cloud service offerings. While some of our products contain encryption or security algorithms to protect third-party content or user-generated data stored on our products, these products could still be hacked or the encryption schemes could be compromised, breached, or circumvented by motivated and sophisticated attackers. Further, our products contain sophisticated hardware and operating system software and applications that may contain security problems, security vulnerabilities, or defects in design or manufacture, including “bugs” and other problems that could interfere with the intended operation of our products. To the extent our products are hacked or the encryption schemes are compromised or breached, this could harm our business by requiring us to employ additional resources to fix the errors or defects, exposing us to litigation and indemnification claims and hurting our reputation.

If efforts to breach our infrastructure, systems or products are successful or we are unable to protect against these risks, we could suffer interruptions, delays, or cessation of operations of our systems, and loss or misuse of proprietary or confidential information, IP, or sensitive or personal information. Breaches of our infrastructure, systems or products could also cause our customers and other affected third parties to suffer loss or misuse of proprietary or confidential information, IP, or sensitive or personal information, and could harm our relationships with customers and other third parties. As a result, we could experience additional costs, indemnification claims, litigation, and damage to our brand and reputation. All of these consequences could harm our reputation and our business and materially and adversely affect our operating results and financial condition.

We are subject to laws, rules, and regulations relating to the collection, use, sharing, and security of third-party data including personal data, and our failure to comply with these laws, rules and regulations could subject us to proceedings by governmental entities or others and cause us to incur penalties, significant legal liability, or loss of customers, loss of revenue, and reputational harm.

We are subject to laws, rules, and regulations relating to the collection, use, and security of third-party data including data that relates to or identifies an individual person. In many cases, these laws apply not only to third-party transactions, but also to transfers of information between us and our subsidiaries, and among us, our subsidiaries and other parties with which we have commercial relations. Our possession and use of third-party data, including personal data and employee data in conducting our business, subjects us to legal and regulatory burdens that may require us to notify vendors, customers or employees or other parties with which we have commercial relations of a data security breach and to respond to regulatory inquiries and to enforcement proceedings. Global privacy and data protection legislation, enforcement, and policy activity in this area are rapidly expanding and evolving, and may be inconsistent from jurisdiction to jurisdiction. Compliance requirements and even our inadvertent failure to comply with applicable laws may cause us to incur substantial costs, subject us to proceedings by governmental entities or others, and cause us to incur penalties or other significant legal liability, or lead us to change our business practices.

We are subject to risks related to product defects, which could result in product recalls or epidemic failures and could subject us to warranty claims in excess of our warranty provisions or which are greater than anticipated, litigation or indemnification claims.

We warrant the majority of our products for periods of one to five years. We test our products in our manufacturing facilities through a variety of means. However, our testing may fail to reveal defects in our products that may not become apparent until after the products have been sold into the market. In addition, our products may be used in a manner that is not intended or anticipated by us, resulting in potential liability. Accordingly, there is a risk that product defects will occur, including as a result of third-party components or applications that we incorporate in our products, which could require a product recall. Product recalls can be expensive to implement. As part of a product recall, we may be required or choose to replace the defective product. Moreover, there is a risk that product defects may trigger an epidemic failure clause in a customer agreement. If an epidemic failure occurs, we may be required to replace or refund the value of the defective product and to cover certain other costs associated with the consequences of the epidemic failure. In addition, product defects, product recalls or epidemic failures may cause damage to our reputation or customer relationships, lost revenue, indemnification for a recall of our customers' products, warranty claims, litigation or loss of market share with our customers, including our OEM and original design manufacturers ("ODM") customers. Our business liability insurance may be inadequate or future coverage may be unavailable on acceptable terms, which could adversely impact our operating results and financial condition.

Our standard warranties contain limits on damages and exclusions of liability for consequential damages and for misuse, improper installation, alteration, accident or mishandling while in the possession of someone other than us. We record an accrual for estimated warranty costs at the time revenue is recognized. We may incur additional expenses if our warranty provision do not reflect the actual cost of resolving issues related to defects in our products, whether as a result of a product recall, epidemic failure or otherwise. If these additional expenses are significant, it could adversely affect our business, financial condition and operating results.

We are subject to state, federal and international legal and regulatory requirements, such as environmental, labor, trade, health, safety, anti-corruption and tax regulations, customers' standards of corporate citizenship, and industry and coalition standards, such as those established by the Responsible Business Alliance ("RBA"), and compliance with those requirements could cause an increase in our operating costs and failure to comply may harm our business.

We are subject to, and may become subject to additional, state, federal and international laws and regulations governing our environmental, labor, trade, health, safety, anti-corruption and tax practices. These laws and regulations, particularly those applicable to our international operations, are or may be complex, extensive and subject to change. We will need to ensure that we and our suppliers, customers and partners timely comply with such laws and regulations, which may result in an increase in our operating costs. Legislation has been, and may in the future be, enacted in locations where we manufacture or sell our products, which could impair our ability to conduct business in certain jurisdictions or with certain customers and harm our operating results. In addition, climate change and financial reform legislation is a significant topic of discussion and has generated and may continue to generate federal, international or other regulatory responses in the near future. If we or our suppliers, customers or partners fail to timely comply with applicable legislation, certain customers may refuse to purchase our products or we may face increased operating costs as a result of taxes, fines or penalties, or legal liability and reputational damage, which could have a material adverse effect on our business, operating results and financial condition.

In connection with our compliance with environmental laws and regulations, as well as our compliance with industry and coalition environmental initiatives, such as those established by the RBA, the standards of business conduct required by some of our customers, and our commitment to sound corporate citizenship in all aspects of our business, we could incur substantial compliance and operating costs and be subject to disruptions to our operations and logistics. In addition, if we or our suppliers, customers or partners were found to be in violation of these laws or noncompliant with these initiatives or standards of conduct, we could be subject to governmental fines, liability to our customers and damage to our reputation and corporate brand, which could cause our financial condition and operating results to suffer.

We and certain of our officers are at times involved in litigation, investigations and governmental proceedings, which may be costly, may divert the efforts of our key personnel and could result in adverse court rulings, fines or penalties, which could materially harm our business.

We are involved in litigation, including antitrust and commercial matters, putative securities class action suits and other actions. We are the plaintiff in some of these actions and the defendant in others. Some of the actions seek injunctive relief, including injunctions against the sale of our products, and substantial monetary damages, which if granted or awarded, could materially harm our business, financial condition and operating results. From time to time, we may also be the subject of inquiries, requests for information, investigations and actions by government and regulatory agencies regarding our businesses. Any such matters could result in material adverse consequences to our results of operations, financial condition or ability to conduct our business, including fines, penalties or restrictions on our business activities.

Litigation is subject to inherent risks and uncertainties that may cause actual results to differ materially from our expectations. In the event of an adverse outcome in any litigation, investigation or governmental proceeding, we could be required to pay substantial damages, fines or penalties and cease certain practices or activities, including the manufacture, use and sale of products. With or without merit, such matters can be complex, can extend for a protracted period of time, can be very expensive and the expense can be unpredictable. Litigation initiated by us could also result in counter-claims against us, which could increase the costs associated with the litigation and result in our payment of damages or other judgments against us. In addition, litigation, investigations or governmental proceedings and any related publicity may divert the efforts and attention of some of our key personnel and may also harm the market prices of our securities.

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, investigations or governmental proceedings. These liabilities could be substantial and may include, among other things: the costs of defending lawsuits against these individuals; the cost of defending shareholder derivative suits; the cost of governmental, law enforcement or regulatory investigations or proceedings; civil or criminal fines and penalties; legal and other expenses; and expenses associated with the remedial measures, if any, which may be imposed.

The nature of our industry and its reliance on IP and other proprietary information subjects us and our suppliers, customers and partners to the risk of significant litigation.

The data storage industry has been characterized by significant litigation. This includes litigation relating to patent and other IP rights, product liability claims and other types of litigation. We have historically been involved in frequent disputes regarding patent and other IP rights, and we have in the past received, and we may in the future receive, communications from third parties asserting that certain of our products, processes or technologies infringe upon their patent rights, copyrights, trademark rights or other IP rights. We may also receive claims of potential infringement if we attempt to license IP to others. IP risks increase when we enter into new markets where we have little or no IP protection as a defense against litigation. The complexity of the technology involved and the uncertainty of IP litigation increase the IP risks we face. Litigation can be expensive, lengthy and disruptive to normal business operations. Moreover, the results of litigation are inherently uncertain and may result in adverse rulings or decisions. We may be subject to injunctions, enter into settlements or be subject to judgments that may, individually or in the aggregate, have a material adverse effect on our business, financial condition or operating results.

If we incorporate third-party technology into our products or if claims or actions are asserted against us for alleged infringement of the IP of others, we may be required to obtain a license or cross-license, modify our existing technology or design a new non-infringing technology. Such licenses or design modifications can be extremely costly. We evaluate notices of alleged patent infringement and notices of patents from patent holders that we receive from time to time. We may decide to settle a claim or action against us, which settlement could be costly. We may also be liable for any past infringement. If there is an adverse ruling against us in an infringement lawsuit, an injunction could be issued barring production or sale of any infringing product. It could also result in a damage award equal to a reasonable royalty or lost profits or, if there is a finding of willful infringement, treble damages. Any of these results would increase our costs and harm our operating results. In addition, our suppliers, customers and partners are subject to similar risks of litigation, and a material, adverse ruling against a supplier, customer or partner could negatively impact our business.

Moreover, from time to time, we agree to indemnify certain of our suppliers and customers for alleged IP infringement. The scope of such indemnity varies but may include indemnification for direct and consequential damages and expenses, including attorneys' fees. We may be engaged in litigation as a result of these indemnification obligations. Third party claims for patent infringement are excluded from coverage under our insurance policies. A future obligation to indemnify our customers or suppliers may harm our business, financial condition and operating results.

Our reliance on IP and other proprietary information subjects us to the risk that these key ingredients of our business could be copied by competitors.

Our success depends, in significant part, on the proprietary nature of our technology, including non-patentable IP such as our process technology. We primarily rely on patent, copyright, trademark and trade secret laws, as well as nondisclosure agreements and other methods, to protect our proprietary technologies and processes. There can be no assurance that our existing patents will continue to be held valid, if challenged, or that they will have sufficient scope or strength to protect us. It is also possible that competitors or other unauthorized third parties may obtain, copy, use or disclose, illegally or otherwise, our proprietary technologies and processes, despite our efforts to protect our proprietary technologies and processes. If a competitor is able to reproduce or otherwise capitalize on our technology despite the safeguards we have in place, it may be difficult, expensive or impossible for us to obtain necessary legal protection. There are entities whom we believe may infringe our IP. Enforcement of our rights often requires litigation. If we bring a patent infringement action and are not successful, our competitors would be able to use similar technology to compete with us. Moreover, the defendant in such an action may successfully countersue us for infringement of their patents or assert a counterclaim that our patents are invalid or unenforceable. Also, the laws of some foreign countries may not protect our IP to the same extent as do U.S. laws. In addition to patent protection of IP rights, we consider elements of our product designs and processes to be proprietary and confidential. We rely upon employee, consultant and vendor non-disclosure agreements and contractual provisions and a system of internal safeguards to protect our proprietary information. However, any of our registered or unregistered IP rights may be challenged or exploited by others in the industry, which could harm our operating results.

The success of our branded products depends in part on the positive image that consumers have of our brands. We believe the popularity of our brands makes them a target of counterfeiting or imitation, with third parties attempting to pass off counterfeit products as our products. Any occurrence of counterfeiting, imitation or confusion with our brands could adversely affect our reputation and impair the value of our brands, which in turn could negatively impact sales of our branded products, our share and our gross margin, as well as increase our administrative costs related to brand protection and counterfeit detection and prosecution.

Flash Ventures' equipment lease agreements contain covenants and other cancellation events, and cancellation of the leases would harm our business, operating results and financial condition.

Flash Ventures sells to and leases back a portion of its equipment from a consortium of financial institutions. Most of the lease obligations are guaranteed 50% by us and 50% by TMC. Some of the lease obligations are guaranteed in full by us. As of June 28, 2019, the portion of outstanding obligations covered by our guarantees totaled approximately $1.58 billion, based upon the Japanese yen to U.S. dollar exchange rate at June 28, 2019. The leases are subject to customary covenants and cancellation events that relate to Flash Ventures and each of the guarantors. Cancellation events include, among other things, an assignment of all or a substantial part of a guarantor's business and acceleration of other monetary debts of Flash Ventures or a guarantor above a specified threshold. If a cancellation event were to occur, Flash Ventures would be required to negotiate a resolution with the other parties to the lease transactions to avoid cancellation and acceleration of the lease obligations. Such resolution could include, among other things, supplementary security to be supplied by us, increased interest rates or waiver fees. If a resolution is not reached, we may be required to pay all of the outstanding lease obligations covered by our guarantees, which would significantly reduce our cash position and may force us to seek additional financing, which may not be available on terms acceptable to us, if at all.

Any decisions to reduce or discontinue paying cash dividends to our shareholders or to reduce or discontinue repurchases of shares of our common stock pursuant to our previously announced stock repurchase program could cause the market price for our common stock to decline.

We may modify, suspend or cancel our cash dividend policy in any manner and at any time. In addition, we may start, stop or vary repurchases of shares of our common stock as we deem appropriate and as market conditions allow. Any reduction or discontinuance by us of the payment of quarterly cash dividends or the repurchases of our common stock pursuant to our stock repurchase program could cause the market price of our common stock to decline. Moreover, in the event our payment of quarterly cash dividends or repurchases of shares of our common stock are reduced or discontinued, our failure or inability to resume paying cash dividends or repurchasing shares of our common stock at historical levels could cause the market price of our common stock to decline.

Fluctuations in currency exchange rates as a result of our international operations may negatively affect our operating results.

Because we manufacture and sell our products abroad, our revenue, cost of revenue, margins, operating costs and cash flows are impacted by fluctuations in foreign currency exchange rates. If the U.S. dollar exhibits sustained weakness against most foreign currencies, the U.S. dollar equivalents of unhedged manufacturing costs could increase because a significant portion of our production costs are foreign-currency denominated. Conversely, there would not be an offsetting impact to revenues since revenues are substantially U.S. dollar denominated. Additionally, we negotiate and procure some of our component requirements in U.S. dollars from non-U.S. based vendors. If the U.S. dollar weakens against other foreign currencies, some of our component suppliers may increase the price they charge for their components in order to maintain an equivalent profit margin. In addition, our purchases of flash-based memory from Flash Ventures and our investment in Flash Ventures are denominated in Japanese yen. If the Japanese yen appreciates against the U.S. dollar, our cost of purchasing flash-based memory wafers and the cost to us of future capital funding of Flash Ventures would increase. If any of these events occur, they could have a negative impact on our operating results.

Prices for our products are substantially U.S. dollar denominated, even when sold to customers that are located outside the U.S. Therefore, as a substantial portion of our sales are from countries outside the U.S., fluctuations in currency exchanges rates, most notably the strengthening of the U.S. dollar against other foreign currencies, contribute to variations in sales of products in impacted jurisdictions and could adversely impact demand and revenue growth. In addition, currency variations can adversely affect margins on sales of our products in countries outside the U.S.

We attempt to manage the impact of foreign currency exchange rate changes by, among other things, entering into short-term, foreign exchange contracts. However, these contracts may not cover our full exposure, and can be canceled by the counterparty if currency controls are put in place. Thus, our decisions and hedging strategy with respect to currency risks may not be successful and harm our operating results. Further, the ability to enter into foreign exchange contracts with financial institutions is based upon our available credit from such institutions and compliance with covenants and other restrictions. Operating losses, third party downgrades of our credit rating or instability in the worldwide financial markets could impact our ability to effectively manage our foreign currency exchange rate risk. Hedging also exposes us to the credit risk of our counterparty financial institutions.

Increases in our customers' credit risk could result in credit losses and term extensions under existing contracts with customers with credit losses could result in an increase in our operating costs.

Some of our OEM customers have adopted a subcontractor model that requires us to contract directly with companies, such as ODMs, that provide manufacturing and fulfillment services to our OEM customers. Because these subcontractors are generally not as well capitalized as our direct OEM customers, this subcontractor model exposes us to increased credit risks. Our agreements with our OEM customers may not permit us to increase our product prices to alleviate this increased credit risk. Additionally, as we attempt to expand our OEM and distribution channel sales into emerging economies such as Brazil, Russia, India and China, the customers with the most success in these regions may have relatively short operating histories, making it more difficult for us to accurately assess the associated credit risks. Any credit losses we may suffer as a result of these increased risks, or as a result of credit losses from any significant customer, especially in situations where there are term extensions under existing contracts with such customers, would increase our operating costs, which may negatively impact our operating results.

We have made and continue to make a number of estimates and assumptions relating to our consolidated financial reporting, and actual results may differ significantly from our estimates and assumptions.

We have made and continue to make a number of estimates and assumptions relating to our consolidated financial reporting. The highly technical nature of our products and the rapidly changing market conditions with which we deal means that actual results may differ significantly from our estimates and assumptions. These changes have impacted our financial results in the past and may continue to do so in the future. Key estimates and assumptions for us include:

- price protection adjustments and other sales promotions and allowances on products sold to retailers, resellers and distributors;
- inventory adjustments for write-down of inventories to lower of cost or net realizable value;
- testing of goodwill and other long-lived assets for impairment;

- accruals for product returns;
- accruals for litigation and other contingencies;
- liabilities for unrecognized tax benefits; and
- provisional estimates related to tax reform.

In addition, changes in existing accounting or taxation rules or practices, new accounting pronouncements or taxation rules, or varying interpretations of current accounting pronouncements or taxation practice could have an adverse effect on our results of operations and financial condition.

The market price of our common stock is volatile.

The market price of our common stock has been, and may continue to be, volatile. Factors that may significantly affect the market price of our common stock include the following:

- actual or anticipated fluctuations in our operating results, including those resulting from the seasonality of our business;
- perceptions about our strategic relationships and joint ventures, access to supply of flash-based memory, new technologies and technology transitions;
- announcements of technological innovations or new products by us or our competitors, which may decrease the volume and profitability of sales of our existing products and increase the risk of inventory obsolescence;
- strategic actions by us or competitors, such as acquisitions and restructurings;
- periods of severe pricing pressures due to oversupply or price erosion resulting from competitive pressures or industry consolidation;
- proposed or adopted regulatory changes or developments or anticipated or pending investigations, proceedings or litigation that involve or affect us or our competitors;
- failure to meet analysts' revenue or earnings estimates or changes in financial estimates or publication of research reports and recommendations by financial analysts relating specifically to us or the storage industry in general;
- announcements relating to dividends and share repurchases; and
- macroeconomic conditions that affect the market generally and, in particular, developments related to market conditions for our industry.

In addition, the sale of substantial amounts of shares of our common stock, or the perception that these sales may occur, could adversely affect the market price of our common stock. Further, the stock market is subject to fluctuations in the stock prices and trading volumes that affect the market prices of the stock of public companies, including us. These broad market fluctuations have adversely affected and may continue to adversely affect the market price of shares of our common stock. For example, expectations concerning general economic conditions may cause the stock market to experience extreme price and volume fluctuations from time to time that particularly affect the stock prices of many high technology companies. These fluctuations may be unrelated to the operating performance of the companies.

Securities class action lawsuits are often brought against companies after periods of volatility in the market price of their securities. A number of such suits have been filed against us in the past, and should any new lawsuits be filed, such matters could result in substantial costs and a diversion of resources and management's attention.

Further, a sustained decline in our stock price or market capitalization are among the factors that may be considered a change in circumstances indicating that the carrying value of our long-lived assets or goodwill may be impaired and, if an impairment review is triggered, could require us to record a significant charge to earnings in our Consolidated Financial Statements.

Our cash balances and investment portfolio are subject to various risks, any of which could adversely impact our financial position.

Given the international footprint of our business, we have both domestic and international cash balances. From time to time, our investment portfolio may include various holdings, security types, and maturities. Our investment portfolio is subject to general credit, liquidity, market, political, sovereign and interest rate risks, which may be exacerbated by unusual events that affect global financial markets. Our investment portfolio may include investment grade corporate securities, bank deposits, asset backed securities and U.S. government and agency securities. If global credit and equity markets experience prolonged periods of decline, or if there is a downgrade of the U.S. government credit rating due to an actual or threatened default on government debt, our investment portfolio may be adversely impacted and we could determine that our investments may experience an other-than-temporary decline in fair value, requiring impairment charges that could adversely affect our financial results. A failure of any of these financial institutions in which deposits exceed Federal Deposit Insurance Corporation (FDIC) limits could also have an adverse impact on our financial position.

In addition, if we are unable to generate sufficient cash flows from operations to repay our indebtedness, fund acquisitions, pay dividends, or repurchase shares of our common stock, we may choose or be required to increase our borrowings, if available, or to repatriate funds to the U.S. at an additional tax cost. We must comply with regulations regarding the conversion and distribution of funds earned in the local currencies of various countries. If we cannot comply with these or other applicable regulations, we may face increased difficulties in using cash generated in these countries.

Item 1B.*Unresolved Staff Comments*

Not applicable.

Item 2. *Properties*

Our principal executive offices are located in San Jose, California. Our leased facilities are occupied under leases that expire at various times through 2034. Our principal manufacturing, R&D, marketing and administrative facilities as of June 28, 2019 were as follows:

Location	Buildings Owned or Leased	Approximate Square Footage	Description
United States			
California			
Fremont	Leased	290,000	Manufacturing of head wafers and R&D
Irvine	Leased	490,000	R&D, administrative, marketing and sales
Milpitas	Owned	589,000	R&D, marketing and sales, and administrative
San Jose	Owned and Leased	2,750,000	Manufacturing of head wafers, head, media and product development, R&D, administrative, marketing and sales
Colorado			
Longmont	Leased	62,000	R&D
Minnesota			
Rochester	Leased	121,000	Product development
Asia			
China			
Shanghai	Owned	774,000	Assembly and test of SSDs
Shenzhen	Owned and Leased	567,000	Manufacturing of media
Japan			
Fujisawa	Owned	661,000	Product development
Malaysia			
Johor	Owned	277,000	Manufacturing of substrates
Kuala Lumpur	Owned	146,000	R&D
Kuching	Owned	285,000	Manufacturing and development of substrates
Penang	Owned	1,664,000	Assembly and test of SSDs, manufacturing of media, and R&D
Philippines			
Laguna	Owned	632,000	Manufacturing of HGAs and slider fabrication
Thailand			
Bang Pa-In	Owned	1,577,000	Slider fabrication, manufacturing of HDDs and HGAs, and R&D
Prachinburi	Owned	838,000	Manufacturing of HDDs
India			
Bangalore	Owned and Leased	638,000	R&D and marketing
Middle East			
Israel			
Kfar Saba	Owned	167,000	R&D and marketing
Tefen	Owned	64,000	R&D and marketing

We also lease office space in various other locations throughout the world primarily for R&D, sales, operations, administration and technical support. We believe our present facilities are adequate for our current needs, although we upgrade our facilities from time to time to meet anticipated future technological and market requirements. In general, new manufacturing facilities can be developed and become operational within approximately nine to eighteen months should we require such additional facilities.

Item 3.*Legal Proceedings*

For a description of our legal proceedings, see Part II, Item 8, Note 16, *Legal Proceedings*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K, which is incorporated by reference in response to this item.

Item 4.*Mine Safety Disclosures*

Not applicable.

PART II

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

Market Information for Common Stock

Our common stock is listed on the Nasdaq Global Select Market ("Nasdaq") under the symbol "WDC." The approximate number of holders of record of our common stock as of August 14, 2019 was 947.

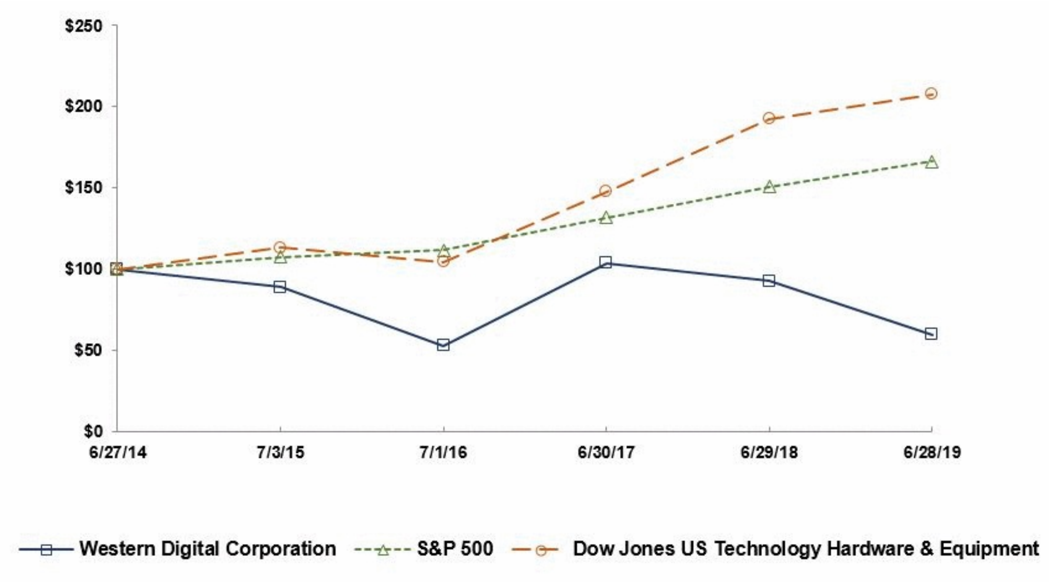
Repurchases of Equity Securities

There were no repurchases by us of shares of our common stock during the quarter ended June 28, 2019.

Stock Performance Graph

The following graph compares the cumulative total stockholder return of our common stock with the cumulative total return of the S&P 500 Index and the Dow Jones U.S. Technology Hardware & Equipment Index for the five years ended June 28, 2019. The graph assumes that $100 was invested in our common stock at the close of market on June 27, 2014 and that all dividends were reinvested. Stockholder returns over the indicated period should not be considered indicative of future stockholder returns.

TOTAL RETURN TO STOCKHOLDERS
(Assumes $100 investment on June 27, 2014)



Total Return Analysis

	June 27, 2014	July 3, 2015	July 1, 2016	June 30, 2017	June 29, 2018	June 28, 2019
Western Digital Corporation	$ 100.00	$ 88.77	$ 52.89	$ 103.62	$ 92.72	$ 59.52
S&P 500 Index	$ 100.00	$ 107.42	$ 111.71	$ 131.70	$ 150.64	$ 166.33
Dow Jones U.S. Technology Hardware & Equipment Index	$ 100.00	$ 113.29	$ 104.58	$ 147.70	$ 192.40	$ 207.45

The stock performance graph shall not be deemed soliciting material or to be filed with the SEC or subject to Regulation 14A or 14C under the Securities Exchange Act of 1934 or to the liabilities of Section 18 of the Securities Exchange Act of 1934, nor shall it be incorporated by reference into any past or future filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent we specifically request that it be treated as soliciting material or specifically incorporate it by reference into a filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.

Item 6. *Selected Financial Data*

Financial Highlights

This selected consolidated financial data should be read together with the Consolidated Financial Statements and related Notes contained in this Annual Report on Form 10-K, as well as the section of this Annual Report on Form 10-K entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	June 28, 2019	June 29, 2018	June 30, 2017	July 1, 2016	July 3, 2015
	(in millions, except per share and employee data)				
Revenue, net	$ 16,569	$ 20,647	$ 19,093	$ 12,994	$ 14,572
Gross profit	3,752	7,705	6,072	3,435	4,221
Net income (loss)	(754)	675	397	242	1,465
Income (loss) per common share:					
Basic	$ (2.58)	$ 2.27	$ 1.38	$ 1.01	$ 6.31
Diluted	$ (2.58)	$ 2.20	$ 1.34	$ 1.00	$ 6.18
Cash dividends declared per common share	$ 2.00	$ 2.00	$ 2.00	$ 2.00	$ 1.80
Working capital	$ 4,660	$ 6,182	$ 6,712	$ 5,635	$ 5,275
Total assets	$ 26,370	$ 29,235	$ 29,860	$ 32,862	$ 15,170
Long-term debt	$ 10,246	$ 10,993	$ 12,918	$ 13,660	$ 2,149
Shareholders' equity	$ 9,967	$ 11,531	$ 11,418	$ 11,145	$ 9,219
Number of employees (1)	61,800	71,600	67,600	72,900	76,400

(1) Excludes temporary employees and contractors.

Results for Tegile Systems, Inc., Upthere, Inc., SanDisk Corporation and Amplidata NV, which were acquired on September 15, 2017, August 25, 2017, May 12, 2016 and March 9, 2015, respectively, are included in our operating results only after their respective dates of acquisition.

Management's Discussion and Analysis of Financial Conditions and Results of Operations

Our Company

We are a leading developer, manufacturer and provider of data storage devices and solutions that address the evolving needs of the information technology ("IT") industry and the infrastructure that enables the proliferation of data in virtually every other industry. We create environments for data to thrive. We drive the innovation needed to help customers capture, preserve, access and transform an ever-increasing diversity of data. Everywhere data lives, from advanced data centers to mobile sensors to personal devices, our industry-leading solutions deliver the possibilities of data.

Our broad portfolio of technology and products address the following key end markets: Client Devices; Data Center Devices and Solutions; and Client Solutions. We also generate license and royalty revenue from our extensive intellectual property ("IP"), which is included in each of these three end market categories.

Our fiscal year ends on the Friday nearest to June 30 and typically consists of 52 weeks. Approximately every five to six years, we report a 53-week fiscal year to align the fiscal year with the foregoing policy. Fiscal years 2019, which ended on June 28, 2019, 2018, which ended on June 29, 2018, and 2017, which ended on June 30, 2017, are each comprised of 52 weeks, with all quarters presented consisting of 13 weeks. Fiscal year 2020, which ends on July 3, 2020, will be comprised of 53 weeks, with the first quarter consisting of 14 weeks and the remaining quarters consisting of 13 weeks each.

Key Developments

Flash Ventures

Through our three business ventures with Toshiba Memory Corporation ("TMC"), referred to as "Flash Ventures", we and TMC operate flash-based memory wafer manufacturing facilities in Japan. We are obligated to pay for variable costs incurred in producing our share of Flash Ventures' flash-based memory wafer supply, based on our three month forecast, which generally equals 50% of Flash Ventures' output. In addition, we are obligated to pay for half of Flash Ventures' fixed costs regardless of the output we choose to purchase. We are also obligated to fund 49.9% to 50% of Flash Ventures' capital investments to the extent that Flash Ventures' operating cash flow is insufficient to fund these investments.

Since its inception, Flash Ventures has been based in a manufacturing site in Yokkaichi, Japan, which currently includes five wafer fabrication facilities. In May 2019, we entered into additional agreements with TMC to extend Flash Ventures to a new wafer fabrication facility, known as "K1," located in Kitakami, Japan. The primary purpose of K1 is to provide clean room space to continue the transition of existing flash-based wafer capacity to newer technology nodes. Output from the initial production line at K1 is expected in the second half of fiscal year 2020. Meaningful output from K1 is not expected to begin until the first half of fiscal year 2021. Our share of the initial commitment for K1 is expected to result in equipment investments, relocation costs and start-up costs totaling approximately $660 million, to be incurred primarily through the second half of fiscal year 2020. We also agreed to prepay an aggregate of approximately $360 million over a 3-year period beginning in the first half of fiscal year 2020 toward K1 building depreciation, to be credited against future wafer charges.

The flash industry is characterized by cyclicality as it responds to variations in customers' demand for products and manages production capacity to meet that demand. As technology conversions have matured and manufacturing yields have improved, flash supply has increased relative to demand. As a result, average selling price per gigabyte of flash-based products has declined in recent quarters.

Flash Ventures has historically operated near 100% of its manufacturing capacity. As a result of flash business conditions, we chose to temporarily reduce our utilization of our share of Flash Ventures' manufacturing capacity at the Yokkaichi site to an abnormally low level through the end of fiscal year 2019 to more closely align our flash-based wafer supply with the projected demand. As a result of this temporary reduction to abnormally low production levels, we incurred costs of $264 million associated with the reduction in utilization, which was recorded as a charge to cost of revenue in the year ended June 28, 2019.

Production levels at the Yokkaichi site have also been reduced as a result of an unexpected power outage incident that occurred in the Yokkaichi region on June 15, 2019. The power outage incident impacted the facilities and process tools and resulted in the damage of flash wafers in production. We expect the incident to result in a reduction of our flash wafer availability of less than 6 exabytes, the majority of which is expected to be contained in the first quarter of fiscal year 2020. As a result of this power outage incident, we incurred aggregate charges of $145 million recorded in cost of revenue for the year ended June 28, 2019, which primarily consisted of the write-off of damaged inventory and unabsorbed manufacturing overhead costs. We expect additional charges of less than $100 million to be recorded in cost of revenue by the end of the first quarter of fiscal 2020. We are pursuing recovery of our losses associated with this event; however, the amount of any recovery cannot be estimated at this time.

Cost and Expense Reduction Actions

During fiscal 2019, we implemented actions to better align our cost and expense structure to near-term business conditions. These actions included accelerating the closure of our HDD manufacturing facility in Kuala Lumpur, Malaysia, reducing other HDD manufacturing costs and other measures to reduce our costs and expenses. We incurred costs of $166 million for the year ended June 28, 2019 in connection with the implementation of these actions and we expect to reduce costs of revenue and operating expenses by $800 million on an annualized basis. The reductions are split approximately equally between cost of revenue and operating expenses. The level of our cost of revenue and operating expenses in any particular period may vary based on differing levels of incentive cash compensation, payroll tax increases, and unexpected or non-recurring costs or expenses, as well as the impact of a 14th week in the first quarter of fiscal 2020.

Results of Operations

Summary Comparison of 2019, 2018 and 2017

The following table sets forth, for the periods presented, selected summary information from our Consolidated Statements of Operations by dollars and percentage of net revenue[1]:

	2019		2018		2017	
			(in millions, except percentages)			
Revenue, net	$ 16,569	100.0 %	$ 20,647	100.0 %	$ 19,093	100.0 %
Cost of revenue	12,817	77.4	12,942	62.7	13,021	68.2
Gross profit	3,752	22.6	7,705	37.3	6,072	31.8
Operating Expenses:						
Research and development	2,182	13.2	2,400	11.6	2,441	12.8
Selling, general and administrative	1,317	7.9	1,473	7.1	1,445	7.6
Employee termination, asset impairment, and other charges	166	1.0	215	1.0	232	1.2
Total operating expenses	3,665	22.1	4,088	19.8	4,118	21.6
Operating income	87	0.5	3,617	17.5	1,954	10.2
Interest and other income (expense):						
Interest income	57	0.3	60	0.3	26	0.1
Interest expense	(469)	(2.8)	(676)	(3.3)	(847)	(4.4)
Other income, net	38	0.2	(916)	(4.4)	(364)	(1.9)
Total interest and other expense, net	(374)	(2.3)	(1,532)	(7.4)	(1,185)	(6.2)
Income (loss) before taxes	(287)	(1.7)	2,085	10.1	769	4.0
Income tax expense	467	2.8	1,410	6.8	372	1.9
Net income (loss)	$ (754)	(4.6)%	$ 675	3.3 %	$ 397	2.1 %

(1) Percentages may not total due to rounding.

The following table sets forth, for the periods presented, summary information regarding our revenue[(1)]:

	2019	2018	2017
	(in millions, except percentages)		
Revenue by Geography:			
Americas	$ 4,361	$ 5,622	$ 5,108
Europe, Middle East and Africa	3,109	3,858	3,276
Asia	9,099	11,167	10,709
Total revenue	$ 16,569	$ 20,647	$ 19,093
Revenue by End Market:			
Client Devices	$ 8,095	$ 10,108	$ 9,520
Data Center Devices & Solutions	5,038	6,075	5,505
Client Solutions	3,436	4,464	4,068
Total revenue	$ 16,569	$ 20,647	$ 19,093
Revenue by Form Factor:			
HDD	$ 8,746	$ 10,698	$ 10,640
Flash-based	7,823	9,949	8,453
Total revenue	$ 16,569	$ 20,647	$ 19,093
Exabytes Shipped	383	389	313

(1) Revenue for 2019 is presented in accordance with Accounting Standards Codification ("ASC") 606. Revenue for 2018 and 2017 is presented in accordance with ASC 605. For information related to our transition from ASC 605 to ASC 606, see Part II, Item 8, Note 1, *Organization and Basis of Presentation*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

For each of 2019, 2018 and 2017, no single customer accounted for 10% or more of our net revenue. For 2019, 2018 and 2017, our top 10 customers accounted for 45%, 42% and 36% of our net revenue, respectively.

Fiscal Year 2019 Net Revenue and Gross Margin Compared to Fiscal Year 2018 Net Revenue and Gross Margin

Net Revenue. Net revenue decreased $4.08 billion, or 19.8%, in 2019 compared to 2018, driven by lower average selling prices per gigabyte for flash-based products and lower sales of HDD products. Specifically, Client Devices revenue for the year ended June 28, 2019 decreased 19.9% year over year, primarily driven by lower sales of client HDD products and flash-based mobile products and lower average selling prices per gigabyte of flash-based products. Our revenue for Data Center Devices and Solutions for the year ended June 28, 2019 decreased 17.1% year over year, driven primarily by lower sales of our enterprise SSDs and existing performance enterprise HDDs while our revenue from capacity enterprise HDDs products was similar to the previous year. Client Solutions revenue for the year ended June 28, 2019 decreased 23.0% year over year, primarily driven by lower average selling prices per gigabyte of flash-based products due to the competitive market landscape and lower sales of retail HDD attributed to a lower HDD market with a shift to SSDs.

Changes in net revenue by geography generally reflect normal fluctuations in market demand and competitive dynamics.

Consistent with standard industry practice, we have sales incentive and marketing programs that provide customers with price protection and other incentives or reimbursements that are recorded as a reduction to gross revenue. For 2019, 2018 and 2017, these programs represented 15%, 12% and 12% of gross revenue, respectively, and adjustments to revenue due to changes in accruals for these programs have generally averaged less than 1% of gross revenue over the last three fiscal years. The amounts attributed to our sales incentive and marketing programs generally vary according to several factors including industry conditions, list pricing strategies, seasonal demand, competitor actions, channel mix and overall availability of products. Changes in future customer demand and market conditions may require us to adjust our incentive programs as a percentage of gross revenue.

Gross Profit and Gross Margin. Gross profit decreased $3.95 billion, or 51%, as compared to 2018, primarily as a result of lower average selling prices per gigabyte for flash-based products due to oversupply and competition, flash manufacturing underutilization charges of $264 million, charges related to the power outage incident of $145 million and a charge of $110 million primarily to reduce component inventory to net realizable value for flash-based multi-chip package products that include externally-sourced dynamic random access memory products. These charges were partially offset by lower amortization expense on acquired intangible assets.

Operating Expenses

Fiscal Year 2019 Operating Expenses Compared to Fiscal Year 2018 Operating Expenses

Research and development ("R&D") expense decreased $218 million, or 9%, compared to 2018, primarily due to lower variable and stock-based compensation expense, as well as savings realized from our expense reduction actions.

Selling, general and administrative ("SG&A") expense decreased $156 million, or 11%, compared to 2018, primarily due to lower variable compensation expense, as well as savings realized from our expense reduction actions. In addition, we had lower charges related to stock-based compensation expenses, amortization expense on acquired intangible assets, charges related to the implementation of cost-saving initiatives, acquisition-related charges and other charges, which aggregated to $317 million for 2019 compared to $340 million for 2018.

The decrease in employee termination, asset impairment and other charges reflects lower costs for closure of foreign manufacturing facilities and for our 2016 restructuring plan, which were initiated in prior years, partially offset by additional actions associated with the realignment of our business in fiscal year 2019. For additional information regarding employee termination, asset impairment and other charges, see Part II, Item 8, Note 15, *Employee Termination, Asset Impairment and Other Charges*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Interest and Other Income (Expense)

Fiscal Year 2019 Interest and Other Income (Expense) Compared to Fiscal Year 2018 Interest and Other Income (Expense)

Total interest and other expense, net decreased $1.16 billion, or 76%, in 2019 primarily due to the loss on extinguishment of debt of $899 million in the prior year as well as lower interest expense resulting from reductions in the principal amount of debt and lower interest rates as a result of changes to our debt facilities in the third and fourth quarters of fiscal 2018, partially offset by increases in the LIBOR interest rate.

Income Tax Expense

The following table sets forth income tax information from our Consolidated Statements of Operations by dollar and effective tax rate:

	2019	2018	2017
	(in millions, except percentages)		
Income (loss) before taxes	$ (287)	$ 2,085	$ 769
Income tax expense (benefit)	467	1,410	372
Effective tax rate	(163)%	68%	48%

The Tax Cuts and Jobs Act (the "2017 Act"), enacted on December 22, 2017, includes a broad range of tax reform proposals affecting businesses, including a reduction in the U.S. federal corporate tax rate from 35% to 21%, a one-time mandatory deemed repatriation tax on earnings of certain foreign subsidiaries that were previously tax deferred and the creation of new taxes on certain foreign earnings.

When initially accounting for the tax effects of the enactment of the 2017 Act, we applied the applicable Securities and Exchange Commission ("SEC") guidance and made a reasonable estimate of the effects on our existing deferred tax balances and the one-time mandatory deemed repatriation tax required by the 2017 Act. As we finalized the accounting for the tax effects of the enactment of the 2017 Act during the one-year measurement period permitted by applicable SEC guidance, we reflected adjustments to the recorded provisional amounts. During the second quarter of fiscal 2019, we completed our accounting for the tax effects of the enactment of the 2017 Act. Although the U.S. Treasury and the Internal Revenue Service ("IRS") have issued tax guidance on certain provisions of the 2017 Act since the enactment date, we anticipate the issuance of future additional regulatory and interpretive guidance, even though the one-year measurement period has ended. Although we were able to apply a reasonable interpretation of the law along with any available guidance in finalizing our accounting for the tax effects of the 2017 Act, such future additional regulatory or interpretive guidance would constitute new information which may require further refinements to our estimates in future periods.

The primary driver of the difference between the effective tax rate for the year ended June 28, 2019 and the U.S. Federal statutory rate of 21% is the discrete effect of the finalization of the accounting for the tax effects of the enactment of the 2017 Act. These discrete effects consist of $119 million related to the mandatory deemed repatriation tax and $189 million related to the decision to change our indefinite reinvestment assertion. The remaining difference is attributable primarily to a change in the estimated effective tax rate due to changes in the relative mix of earnings by jurisdiction, partially offset by credits and tax holidays.

The primary drivers for the difference between the effective tax rate for the year ended June 29, 2018 and the blended U.S. Federal statutory rate of 28% are provisional taxes recognized as a result of the 2017 Act and an increase to the valuation allowance for net operating loss carryforwards from restructuring activities, which are partially offset by the 2018 generation of tax credits and tax holidays in Malaysia, Philippines, Singapore and Thailand that expired or will expire at various dates during fiscal years 2018 through 2030. The windfall tax benefits are a result of the adoption of ASU 2016-09, which required us to recognize $78 million of net windfall tax benefits related to vesting and exercises of stock-based awards as a component of our income tax expense for fiscal year 2018.

Our future effective tax rate is subject to future regulatory developments and changes in the mix of our U.S. earnings compared to foreign earnings. Our total tax expense in future fiscal years may also vary as a result of discrete items such as excess tax benefits or deficiencies.

For additional information regarding income tax expense (benefit), see Part II, Item 8, Note 13, *Income Tax Expense*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

A discussion of our results of operations for the year ended June 30, 2017 is included in Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations - Results of Operation", included in our Annual Report on Form 10-K for the year ended June 30, 2017.

Liquidity and Capital Resources

The following table summarizes our statements of cash flows:

	2019	2018	2017
		(in millions)	
Net cash provided by (used in):			
Operating activities	$ 1,547	$ 4,205	$ 3,437
Investing activities	(1,272)	(1,655)	(636)
Financing activities	(1,829)	(3,900)	(4,595)
Effect of exchange rate changes on cash	4	1	(3)
Net decrease in cash and cash equivalents	$ (1,550)	$ (1,349)	$ (1,797)

We believe our cash, cash equivalents and cash generated from operations as well as our available credit facilities will be sufficient to meet our working capital, debt, dividend and capital expenditure needs for at least the next twelve months. Our ability to sustain our working capital position is subject to a number of risks that we discuss in Part I, Item 1A, *Risk Factors,* in this Annual Report on Form 10-K.

During fiscal 2020, we expect cash used for purchases of property, plant and equipment and net activity in notes receivable and equity investments relating to our Flash Ventures joint venture with Toshiba Memory Corporation to be less than $500 million. The total expected cash to be used could vary depending on the timing and completion of various capital projects and the availability, timing and terms of related financing.

A total of $2.37 billion and $4.15 billion of our cash and cash equivalents was held outside of the U.S. as of June 28, 2019 and June 29, 2018, respectively. During the second quarter of fiscal 2019, we finalized the accounting for the tax effects of the mandatory deemed repatriation tax on our indefinite reinvestment assertion. After re-evaluating the existing short- and long-term capital allocation polices, we made the determination that it was our intention to repatriate all of our foreign undistributed earnings. Our decision during the second quarter of fiscal 2019 to change our indefinite reinvestment assertion was based on interpretative guidance issued by the IRS through that date related to the ordering and taxation of a repatriation of our foreign undistributed earnings. During the fourth quarter of fiscal 2019, the IRS issued additional interpretative guidance affecting the taxation of a certain portion of our foreign undistributed earnings, which could result in additional federal taxes. After consideration of this additional interpretative guidance, we made the determination that we no longer intend to repatriate this portion of our foreign undistributed earnings and did not establish an accrual for this liability. For additional information regarding our indefinite reinvestment assertion, see Part II, Item 8, Note 13, *Income Tax Expense*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Operating Activities

Cash flow from operating activities primarily consists of net income, adjusted for non-cash charges, plus or minus changes in operating assets and liabilities. This represents our principal source of cash. Net cash used for changes in operating assets and liabilities was $260 million for 2019, as compared to net cash provided of $486 million for 2018. The net cash provided by changes in other operating assets and liabilities in 2018 primarily reflects the payable recorded for the mandatory deemed repatriation tax as described in Part II, Item 8, Note 13, *Income Tax Expense*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K. Changes in our operating assets and liabilities are also largely affected by our working capital requirements, which are dependent on the effective management of our cash conversion cycle. Our cash conversion cycle measures how quickly we can convert our products into cash through sales. The cash conversion cycles were as follows:

	2019	**2018**	**2017**
		(in days)	
Days sales outstanding	26	39	37
Days in inventory	93	83	65
Days payables outstanding	(54)	(71)	(66)
Cash conversion cycle	65	51	36

Changes in days sales outstanding (“DSOs”) are generally due to the linearity of shipments. Changes in days in inventory (“DIOs”) are generally related to the timing of inventory builds. Changes in days payables outstanding (“DPOs”) are generally related to production volume and the timing of purchases during the period. From time to time, we modify the timing of payments to our vendors. We make modifications primarily to manage our vendor relationships and to manage our cash flows, including our cash balances. Generally, we make the payment term modifications through negotiations with our vendors or by granting to, or receiving from, our vendors’ payment term accommodations.

For 2019, DSO decreased by 13 days over the prior year, primarily reflecting the timing of shipments and customer collections and the factoring of receivables. DIO increased by 10 days over the prior year, primarily reflecting increases in hard drive inventory in response to the plant closure in Kuala Lumpur, Malaysia and increases in flash inventory as a result of the recent market imbalance. DPO decreased by 17 days over the prior year, primarily reflecting reductions in flash production volumes as well as routine variations in timing of purchases and payments during the period.

Investing Activities

During 2019, net cash used in investing activities primarily consisted of $876 million of capital expenditures and a net $598 million increase in notes receivable issuances to Flash Ventures to fund its capital expansion, partially offset by net proceeds of $103 million from the sale of investments and $119 million from the sale of property, plant and equipment. Net cash used in investing activities for 2018 primarily consisted of $835 million of capital expenditures, a $742 million net increase in notes receivable issuances to and investments in Flash Ventures and $100 million for acquisitions.

Our cash equivalents are primarily invested in money market funds that invest in U.S. Treasury securities and U.S. Government agency securities as well as bank certificates of deposit. In addition, from time to time, we invest directly in U.S. Treasury securities, U.S. and International Government agency securities, certificates of deposit, asset-backed securities and corporate and municipal notes and bonds.

Financing Activities

During 2019, net cash used in financing activities primarily consisted of $681 million for the repayment of our revolving credit facility and debt, $584 million to pay dividends on our common stock and $563 million for share repurchases. Net cash used in financing activities for 2018 primarily consisted of $17.07 billion in debt repayments, $593 million to pay dividends on our common stock and $591 million for share repurchases, partially offset by net proceeds of $14.28 billion from debt issuances and draws under our revolving credit facility.

A discussion of our liquidity and capital resources for the year ended June 30, 2017 is included in Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources", included in our Annual Report on Form 10-K for the year ended June 30, 2017.

Off-Balance Sheet Arrangements

Other than the commitments related to Flash Ventures, facility lease commitments incurred in the normal course of business and certain indemnification provisions (see "Short and Long-term Liquidity-Contractual Obligations and Commitments" below), we do not have any other material off-balance sheet financing arrangements or liabilities, guarantee contracts, retained or contingent interests in transferred assets, or any other obligation arising out of a material variable interest in an unconsolidated entity. We do not have any majority-owned subsidiaries that are not included in the Consolidated Financial Statements. Additionally, with the exception of Flash Ventures and our joint venture with Unisplendour Corporation Limited and Unissoft (Wuxi) Group Co. Ltd. ("Unis"), referred to as the "Unis Venture", we do not have an interest in, or relationships with, any variable interest entities. For additional information regarding our off-balance sheet arrangements, see Part II, Item 8, Note 9, *Commitments, Contingencies and Related Parties*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Short and Long-term Liquidity

Contractual Obligations and Commitments

The following is a summary of our known contractual cash obligations and commercial commitments as of June 28, 2019:

	Total	1 Year (2020)	2-3 Years (2021-2022)	4-5 Years (2023-2024)	More than 5 Years (Beyond 2024)
			(in millions)		
Long-term debt, including current portion[1]	$ 10,694	$ 276	$ 587	$ 7,531	$ 2,300
Interest on debt	1,902	423	815	445	219
Flash Ventures related commitments[2]	5,867	2,620	2,366	808	73
Operating leases	291	59	78	38	116
Purchase obligations and other commitments	2,977	2,050	523	194	210
Mandatory Deemed Repatriation Tax	1,104	62	199	285	558
Total	$ 22,835	$ 5,490	$ 4,568	$ 9,301	$ 3,476

(1) Principal portion of debt, excluding discounts and issuance costs.

(2) Includes reimbursement for depreciation and lease payments on owned and committed equipment, funding commitments for loans and equity investments and payments for other committed expenses, including R&D and building depreciation. Funding commitments assume no additional operating lease guarantees. Additional operating lease guarantees can reduce funding commitments.

Debt

Additional information regarding our indebtedness, including information about availability under our revolving credit facility and the principal repayment terms, interest rates, covenants and other key terms of our outstanding indebtedness, is included in Part II, Item 8, Note 6, *Debt*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Flash Ventures

Flash Ventures sells to and leases back from a consortium of financial institutions a portion of its tools and has entered into equipment lease agreements of which we guarantee half or all of the outstanding obligations under each lease agreement. The leases are subject to customary covenants and cancellation events that relate to Flash Ventures and each of the guarantors. The occurrence of a cancellation event could result in an acceleration of the lease obligations and a call on our guarantees. As of June 28, 2019, we were in compliance with all covenants under these Japanese lease facilities. See Part II, Item 8, Note 9, *Commitments, Contingencies and Related Parties*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for information regarding Flash Ventures.

Purchase Obligations and Other Commitments

In the normal course of business, we enter into purchase orders with suppliers for the purchase of components used to manufacture our products. These purchase orders generally cover forecasted component supplies needed for production during the next quarter, are recorded as a liability upon receipt of the components, and generally may be changed or canceled at any time prior to shipment of the components. We also enter into long-term agreements with suppliers that contain fixed future commitments, which are contingent on certain conditions such as performance, quality and technology of the vendor's components. These arrangements are included under "Purchase obligations" in the table above.

Mandatory Deemed Repatriation Tax

The following is a summary of our estimated mandatory deemed repatriation tax obligations that are payable in the following fiscal years (in millions):

2020	$	62
2021		99
2022		100
2023		99
2024		186
2025		248
2026		310
Total	$	1,104

For additional information regarding our estimate of the total tax liability for the mandatory deemed repatriation tax, see Part II, Item 8, Note 13, *Income Tax Expense*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Unrecognized Tax Benefits

As of June 28, 2019, the liability for unrecognized tax benefits (excluding accrued interest and penalties) was approximately $695 million. Accrued interest and penalties related to unrecognized tax benefits as of June 28, 2019 was approximately $123 million. Of these amounts, approximately $699 million could result in potential cash payments. We are not able to provide a reasonable estimate of the timing of future tax payments related to these obligations. For additional information regarding our total tax liability for unrecognized tax benefits, see Part II, Item 8, Note 13, *Income Tax Expense*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Interest Rate Swap

We have entered into interest rate swap agreements to moderate our exposure to fluctuations in interest rates underlying our variable rate debt. For a description of our current interest rate swaps, see Part II, Item 7A, *Quantitative and Qualitative Disclosures About Market Risk* included in this Annual Report on Form 10-K.

Foreign Exchange Contracts

We purchase foreign exchange contracts to hedge the impact of foreign currency fluctuations on certain underlying assets, liabilities and commitments for operating expenses and product costs denominated in foreign currencies. For a description of our current foreign exchange contract commitments, see Part II, Item 7A, *Quantitative and Qualitative Disclosures About Market Risk* and Part II, Item 8, Note 5, *Derivative Instruments and Hedging Activities*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Indemnifications

In the ordinary course of business, we may provide indemnifications of varying scope and terms to customers, vendors, lessors, business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of our breach of agreements, products or services to be provided by us, environmental compliance or from IP infringement claims made by third parties. In addition, we have entered into indemnification agreements with our directors and certain of our officers that will require us, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. We maintain director and officer insurance, which may cover certain liabilities arising from our obligation to indemnify our directors and officers in certain circumstances.

It is not possible to determine the maximum potential amount under these indemnification agreements due to the limited history of prior indemnification claims and the unique facts and circumstances involved in each particular agreement. Such indemnification agreements may not be subject to maximum loss clauses. Historically, we have not incurred material costs as a result of obligations under these agreements.

Stock Repurchase Program

Our Board of Directors previously authorized $5.00 billion for the repurchase of our common stock. On July 25, 2018, our Board of Directors authorized a new $5.00 billion share repurchase program that is effective through July 25, 2023, replacing all prior programs. For the three months ended June 28, 2019, we did not make any stock repurchases. For the year ended June 28, 2019, we repurchased 0.8 million shares for a total cost of $61 million under the previous authorization and 7.6 million shares for a total cost of $502 million under the new authorization. Therefore, our stock repurchases under all stock repurchase authorizations in effect for the year ended June 28, 2019 totaled $563 million. The remaining amount available to be repurchased under our current stock repurchase program as of June 28, 2019 was $4.50 billion. Repurchases under the stock repurchase program may be made in the open market or in privately negotiated transactions and may be made under a Rule 10b5-1 plan. We expect stock repurchases to be funded principally by operating cash flows.

Cash Dividend

Since the first quarter of 2013, we have issued a quarterly cash dividend. During the twelve months ended June 28, 2019, we declared aggregate cash dividends of $2.00 per share on our outstanding common stock totaling $583 million, of which $147 million was paid on July 15, 2019.

On August 7, 2019, we declared a cash dividend of $0.50 per share of our common stock to our shareholders of record as of October 4, 2019, which will be paid on October 22, 2019. We may modify, suspend, or cancel our cash dividend policy in any manner and at any time. The amount of future dividends under our cash dividend policy, and the declaration and payment thereof, will be based upon all relevant factors, including our financial position, results of operations, cash flows, capital requirements and restrictions under our Credit Agreement and other financing agreements, and shall be in compliance with applicable law.

Recent Accounting Pronouncements

For a description of recently issued and adopted accounting pronouncements, including the respective dates of adoption and expected effects on our results of operations and financial condition, see Part II, Item 8, Note 2, *Recent Accounting Pronouncements*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

We have prepared the accompanying Consolidated Financial Statements in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). The preparation of the financial statements requires the use of judgments and estimates that affect the reported amounts of revenue, expenses, assets, liabilities and shareholders' equity. We have adopted accounting policies and practices that are generally accepted in the industry in which we operate. We believe the following are our most critical accounting policies that affect significant areas and involve judgment and estimates made by us. If these estimates differ significantly from actual results, the impact to Consolidated Financial Statements may be material.

Revenue

We provide distributors and retailers (collectively referred to as "resellers") with limited price protection for inventories held by resellers at the time of published list price reductions and/or a right of return. We also provide resellers and original equipment manufacturers ("OEMs") with other sales incentive programs. We use judgment in our assessment of variable consideration in contracts to be included in the transaction price. We use the expected value method to arrive at the amount of variable consideration. We believe the estimate of variable consideration is not constrained and that the expected value method is the appropriate estimate of the amount of variable consideration based on the fact that we have a large number of contracts with similar characteristics. Our methodology for the estimates is based on several factors, including anticipated price decreases during the reseller holding period, resellers' sell-through and inventory levels, estimated amounts to be reimbursed to qualifying customers, historical pricing information, historical and anticipated returns information and customer claim processing. We also have programs under which we reimburse qualified distributors and retailers for certain marketing expenditures, which are typically recorded as a reduction of the transaction price and, therefore, of revenue. We net sales rebates against open customer receivable balances if the criteria to offset are met, otherwise they are recorded within other accrued liabilities.

Inventories

We value inventories at the lower of cost (first-in, first-out) or net realizable value. We record inventory write-downs for the valuation of inventory at the lower of cost or net realizable value by analyzing market conditions and estimates of future sales prices as compared to inventory costs and inventory balances.

We evaluate inventory balances for excess quantities and obsolescence on a regular basis by analyzing estimated demand, inventory on hand, sales levels and other information and reduce inventory balances to net realizable value for excess and obsolete inventory based on this analysis. Unanticipated changes in technology or customer demand could result in a decrease in demand for one or more of our products, which may require a write down of inventory that could materially affect operating results.

Litigation and Other Contingencies

When we become aware of a claim or potential claim, we assess the likelihood of any loss or exposure. We disclose information regarding each material claim where the likelihood of a loss contingency is probable or reasonably possible. If a loss contingency is probable and the amount of the loss can be reasonably estimated, we record an accrual for the loss. In such cases, there may be an exposure to potential loss in excess of the amount accrued. Where a loss is not probable but is reasonably possible or where a loss in excess of the amount accrued is reasonably possible, we disclose an estimate of the amount of the loss or range of possible losses for the claim if a reasonable estimate can be made, unless the amount of such reasonably possible losses is not material to our financial position, results of operations or cash flows. The ability to predict the ultimate outcome of such matters involves judgments, estimates and inherent uncertainties. The actual outcome of such matters could differ materially from management's estimates. For additional information, see Part II, Item 8, Note 16, *Legal Proceedings*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Income Taxes

We account for income taxes under the asset and liability method, which provides that deferred tax assets and liabilities be recognized for temporary differences between the financial reporting basis and the tax basis of our assets and liabilities and expected benefits of utilizing net operating loss and tax credit carryforwards. We record a valuation allowance when it is more likely than not that the deferred tax assets will not be realized. Each quarter, we evaluate the need for a valuation allowance for our deferred tax assets and we adjust the valuation allowance so that we record net deferred tax assets only to the extent that we conclude it is more likely than not that these deferred tax assets will be realized. We account for interest and penalties related to income taxes as a component of the provision for income taxes.

We recognize liabilities for uncertain tax positions based on a two-step process. To the extent a tax position does not meet a more-likely-than-not level of certainty, no benefit is recognized in the financial statements. If a position meets the more-likely-than-not level of certainty, it is recognized in the financial statements at the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. Interest and penalties related to unrecognized tax benefits are recognized on liabilities recorded for uncertain tax positions and are recorded in our provision for income taxes. The actual liability for unrealized tax benefits in any such contingency may be materially different from our estimates, which could result in the need to record additional liabilities for unrecognized tax benefits or potentially adjust previously-recorded liabilities for unrealized tax benefits and materially affect our operating results.

Goodwill and Other Long-Lived Assets

Goodwill is not amortized. Instead, it is tested for impairment on an annual basis or more frequently whenever events or changes in circumstances indicate that goodwill may be impaired. We perform our annual impairment test as of the first day of our fiscal fourth quarter. We use qualitative factors to determine whether goodwill is more likely than not impaired and whether a quantitative test for impairment is considered necessary. If we conclude from the qualitative assessment that goodwill is more likely than not impaired, we are required to perform a quantitative approach to determine the amount of impairment. We are required to use judgment when applying the goodwill impairment test, including the identification of one or more reporting units. If we had more than one reporting unit, judgment would also be required in the assignment of assets and liabilities to reporting units, assignment of goodwill to reporting units and determination of the fair value of each reporting unit. In addition, the estimates used to determine the fair value of each reporting unit may change based on results of operations, macroeconomic conditions or other factors. Changes in these estimates could materially affect our assessment of the fair value and goodwill impairment for each reporting unit. If our stock price decreases significantly, goodwill could become impaired, which could result in a material charge and adversely affect our results of operations.

Other long-lived intangible assets are amortized over their estimated useful lives based on the pattern in which the economic benefits are expected to be received. Long-lived assets are tested for recoverability whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. If impairment is indicated, the impairment is measured as the amount by which the carrying amount of the assets exceeds the fair value of the assets. The estimates of fair value require evaluation of future market conditions and product lifecycles as well as projected revenue, earnings and cash flow.

Item 7A. *Quantitative and Qualitative Disclosures About Market Risk*

Disclosure About Foreign Currency Risk

Although the majority of our transactions are in U.S. dollars, some transactions are based in various foreign currencies. We purchase short-term, foreign exchange contracts to hedge the impact of foreign currency exchange fluctuations on certain underlying assets, liabilities and commitments for product costs and operating expenses denominated in foreign currencies. The purpose of entering into these hedge transactions is to minimize the impact of foreign currency fluctuations on our results of operations. Substantially all of the contract maturity dates do not exceed 12 months. We do not purchase foreign exchange contracts for speculative or trading purposes. For additional information, see Part II, Item 8, Note 4, *Fair Value Measurements and Investments* and Note 5, *Derivative Instruments and Hedging Activities*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

As of June 28, 2019, we had outstanding the foreign exchange contracts presented in the following table. The designated foreign exchange contracts are entered to protect the U.S. dollar value of our product cost and operating expenses. Changes in fair values of the non-designated foreign exchange contracts are recognized in other income (expense), net and are largely offset by corresponding changes in the fair values of the foreign currency denominated monetary assets and liabilities.

	Contract Amount	Weighted-Average Contract Rate [1]	Mark to Market Unrealized Gain (Loss)
	(in millions, except weighted-average contract rate)		
Designated Hedges (cash flow hedges):			
Japanese yen	$ 1,087	108.98	$ 21
Malaysian ringgit	38	4.17	—
Philippine peso	31	53.13	1
Thai baht	156	31.68	5
Total designated forward contracts	$ 1,312		$ 27
Non-Designated Hedges:			
British pound sterling	$ 25	0.79	$ —
Euro	252	0.88	(1)
Japanese yen	3,520	108.35	(28)
Malaysian ringgit	247	4.16	1
Philippine peso	80	51.74	1
Thai baht	269	31.20	4
Total non-designated forward contracts	$ 4,393		$ (23)

(1) Expressed in units of foreign currency per U.S. dollar.

During 2019, 2018 and 2017, total net realized and unrealized transaction and foreign exchange contract currency gains and losses were not material to our Consolidated Financial Statements.

Notwithstanding our efforts to mitigate some foreign exchange risks, we do not hedge all of our foreign currency exposures, and there can be no assurance that our mitigating activities related to the exposures that we hedge will adequately protect us against risks associated with foreign currency fluctuations.

Disclosure About Other Market Risks

Variable Interest Rate Risk

Borrowings under our revolving credit facility and our term loan A-1 due 2023 bear interest at a rate per annum, at our option, of either an adjusted London Interbank Offered Rate ("LIBOR") (subject to a 0.0% floor) plus an applicable margin varying from 1.125% to 2.000% or a base rate plus an applicable margin varying from 0.125% to 1.000%, in each case depending on our corporate credit ratings. As of June 28, 2019, the applicable margin based on our current credit ratings was 1.5%. Borrowings under our U.S. Term Loan B-4 due 2023 bear interest at a rate per annum, at our option, of either an adjusted LIBOR (subject to a 0.0% floor) plus a margin of 1.75% or a base rate plus a margin of 0.75%.

We have generally held a balance of fixed and variable rate debt. At June 28, 2019, 68% of the par value of our debt was at variable rates. To balance the portfolio, we entered into pay-fixed interest rate swaps on $2.00 billion notional amount, which effectively converts a portion of our term loan to fixed rates through February 2023. As of June 28, 2019, we had $7.26 billion of variable rate debt. After giving effect to the $2.00 billion of interest rate swaps, we effectively had $5.26 billion of long-term debt subject to variations in interest rates and a one percent increase in the variable rate of interest would increase annual interest expense by $53 million.

For additional information regarding our variable interest rate debt, see Part II, Item 8, Note 6, *Debt*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Item 8.*Financial Statements and Supplementary Data*

Index to Financial Statements and Financial Statement Schedule

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Western Digital Corporation:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Western Digital Corporation and subsidiaries (the Company) as of June 28, 2019 and June 29, 2018, the related consolidated statements of operations, comprehensive income (loss), shareholders' equity, and cash flows for each of the years in the three-year period ended June 28, 2019, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of June 28, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of June 28, 2019 and June 29, 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended June 28, 2019, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of June 28, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Item 9A, *Management's Report on Internal Control over Financial Reporting*. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion 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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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/ KPMG LLP

We have served as the Company's auditor since 1970.

Irvine, California

August 27, 2019

WESTERN DIGITAL CORPORATION
CONSOLIDATED BALANCE SHEETS
(in millions, except par value)

	June 28, 2019	June 29, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 3,455	$ 5,005
Accounts receivable, net	1,204	2,197
Inventories	3,283	2,944
Other current assets	535	492
Total current assets	8,477	10,638
Property, plant and equipment, net	2,843	3,095
Notes receivable and investments in Flash Ventures	2,791	2,105
Goodwill	10,076	10,075
Other intangible assets, net	1,711	2,680
Other non-current assets	472	642
Total assets	$ 26,370	$ 29,235
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,567	$ 2,265
Accounts payable to related parties	331	259
Accrued expenses	1,296	1,274
Accrued compensation	347	479
Current portion of long-term debt	276	179
Total current liabilities	3,817	4,456
Long-term debt	10,246	10,993
Other liabilities	2,340	2,255
Total liabilities	16,403	17,704
Commitments and contingencies (Notes 6, 9, 13 and 16)		
Shareholders' equity:		
Preferred stock, $0.01 par value; authorized — 5 shares; issued and outstanding — none	—	—
Common stock, $0.01 par value; authorized — 450 shares; issued — 312 shares in 2019 and 2018; outstanding — 295 shares in 2019 and 296 shares in 2018	3	3
Additional paid-in capital	3,851	4,254
Accumulated other comprehensive loss	(68)	(39)
Retained earnings	7,449	8,757
Treasury stock — common shares at cost; 17 shares in 2019 and 16 shares in 2018	(1,268)	(1,444)
Total shareholders' equity	9,967	11,531
Total liabilities and shareholders' equity	$ 26,370	$ 29,235

The accompanying notes are an integral part of these Consolidated Financial Statements.

WESTERN DIGITAL CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(in millions, except per share amounts)

	Year Ended		
	June 28, 2019	**June 29, 2018**	**June 30, 2017**
Revenue, net	$ 16,569	$ 20,647	$ 19,093
Cost of revenue	12,817	12,942	13,021
Gross profit	3,752	7,705	6,072
Operating expenses:			
Research and development	2,182	2,400	2,441
Selling, general and administrative	1,317	1,473	1,445
Employee termination, asset impairment, and other charges	166	215	232
Total operating expenses	3,665	4,088	4,118
Operating income	87	3,617	1,954
Interest and other income (expense):			
Interest income	57	60	26
Interest expense	(469)	(676)	(847)
Other income (expense), net	38	(916)	(364)
Total interest and other expense, net	(374)	(1,532)	(1,185)
Income (loss) before taxes	(287)	2,085	769
Income tax expense	467	1,410	372
Net income (loss)	$ (754)	$ 675	$ 397
Income (loss) per common share			
Basic	$ (2.58)	$ 2.27	$ 1.38
Diluted	$ (2.58)	$ 2.20	$ 1.34
Weighted average shares outstanding:			
Basic	292	297	288
Diluted	292	307	296
Cash dividends declared per share	$ 2.00	$ 2.00	$ 2.00

The accompanying notes are an integral part of these Consolidated Financial Statements.

WESTERN DIGITAL CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in millions)

	Year Ended		
	June 28, 2019	June 29, 2018	June 30, 2017
Net income (loss)	$ (754)	$ 675	$ 397
Other comprehensive income (loss), before tax:			
Actuarial pension gain (loss)	(39)	(2)	39
Foreign currency translation adjustment	28	18	(115)
Net unrealized gain (loss) on derivative contracts and available-for-sale securities	(39)	7	(75)
Total other comprehensive income (loss), before tax	(50)	23	(151)
Income tax benefit (expense) related to items of other comprehensive income (loss), before tax	21	(4)	(10)
Other comprehensive income (loss), net of tax	(29)	19	(161)
Total comprehensive income (loss)	$ (783)	$ 694	$ 236

The accompanying notes are an integral part of these Consolidated Financial Statements.

WESTERN DIGITAL CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	Year Ended		
	June 28, 2019	June 29, 2018	June 30, 2017
Cash flows from operating activities			
Net income (loss)	$ (754)	$ 675	$ 397
Adjustments to reconcile net income (loss) to net cash provided by operations:			
Depreciation and amortization	1,812	2,056	2,128
Stock-based compensation	306	377	394
Deferred income taxes	374	(348)	12
Loss on disposal of assets	39	21	18
Write-off of issuance costs and amortization of debt discounts	38	221	285
Cash premium on extinguishment of debt	—	720	—
Loss on convertible debt and related instruments	—	—	5
Non-cash portion of employee termination, asset impairment and other charges	—	16	13
Other non-cash operating activities, net	(8)	(19)	94
Changes in:			
Accounts receivable, net	993	(244)	(487)
Inventories	(339)	(598)	(204)
Accounts payable	(588)	(15)	223
Accounts payable to related parties	72	53	38
Accrued expenses	(42)	(17)	231
Accrued compensation	(135)	(26)	115
Other assets and liabilities, net	(221)	1,333	175
Net cash provided by operating activities	1,547	4,205	3,437
Cash flows from investing activities			
Purchases of property, plant and equipment	(876)	(835)	(578)
Proceeds from the sale of property, plant and equipment	119	26	21
Acquisitions, net of cash acquired	—	(100)	—
Purchases of investments	(79)	(89)	(281)
Proceeds from sale of investments	175	48	94
Proceeds from maturities of investments	7	19	417
Investments in Flash Ventures	—	—	(20)
Notes receivable issuances to Flash Ventures	(1,364)	(1,313)	(549)
Notes receivable proceeds from Flash Ventures	766	571	292
Strategic investments and other, net	(20)	18	(32)
Net cash used in investing activities	(1,272)	(1,655)	(636)
Cash flows from financing activities			
Issuance of stock under employee stock plans	118	220	235
Taxes paid on vested stock awards under employee stock plans	(115)	(171)	(124)
Excess tax benefits from employee stock plans	—	—	119
Proceeds from acquired call option	—	—	61
Settlement of convertible debt	—	—	(492)
Repurchases of common stock	(563)	(591)	—
Dividends paid to shareholders	(584)	(593)	(574)
Settlement of debt hedge contracts	—	28	(21)
Proceeds from (repayment of) revolving credit facility	(500)	500	—
Repayment of debt	(181)	(17,074)	(11,697)
Proceeds from debt	—	13,840	7,908
Debt issuance costs	(4)	(59)	(10)
Net cash used in financing activities	(1,829)	(3,900)	(4,595)
Effect of exchange rate changes on cash	4	1	(3)
Net decrease in cash and cash equivalents	(1,550)	(1,349)	(1,797)
Cash and cash equivalents, beginning of year	5,005	6,354	8,151
Cash and cash equivalents, end of year	$ 3,455	$ 5,005	$ 6,354

Supplemental disclosure of cash flow information:						
Cash paid for income taxes	$	377	$	220	$	184
Cash paid for interest	$	431	$	708	$	777
Supplemental disclosure of non-cash investing and financing activities:						
Shares issued in conjunction with settlement of convertible notes	$	—	$	—	$	16
Shares received in conjunction with assumed call options	$	—	$	—	$	(11)

The accompanying notes are an integral part of these Consolidated Financial Statements.

WESTERN DIGITAL CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
(in millions)

	Common Stock		Treasury Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Shareholders' Equity
	Shares	Amount	Shares	Amount				
Balance at July 1, 2016	312	$ 3	(28)	$ (2,238)	$ 4,429	$ 103	$ 8,848	$ 11,145
Net income	—	—	—	—	—	—	397	397
Employee stock plans	—	—	10	583	(472)	—	—	111
Stock-based compensation	—	—	—	—	394	—	—	394
Increase in excess tax benefits from employee stock plans	—	—	—	—	104	—	—	104
Shares issued in conjunction with settlement of convertible notes	—	—	—	—	16	—	—	16
Shares received in conjunction with assumed call options	—	—	—	(11)	—	—	—	(11)
Dividends to shareholders	—	—	—	—	35	—	(612)	(577)
Actuarial pension gain	—	—	—	—	—	27	—	27
Foreign currency translation adjustment	—	—	—	—	—	(113)	—	(113)
Net unrealized loss on derivative contracts and available-for-sale securities	—	—	—	—	—	(75)	—	(75)
Balance at June 30, 2017	312	3	(18)	(1,666)	4,506	(58)	8,633	11,418
Net income	—	—	—	—	—	—	675	675
Adoption of new accounting standards	—	—	—	—	(19)	—	70	51
Employee stock plans	—	—	9	813	(764)	—	—	49
Stock-based compensation	—	—	—	—	377	—	—	377
Equity value of convertible debt issuance, net of deferred taxes	—	—	—	—	125	—	—	125
Repurchases of common stock	—	—	(7)	(591)	—	—	—	(591)
Dividends to shareholders	—	—	—	—	29	—	(621)	(592)
Actuarial pension loss	—	—	—	—	—	(1)	—	(1)
Foreign currency translation adjustment	—	—	—	—	—	18	—	18
Net unrealized gain on derivative contracts and available-for-sale securities	—	—	—	—	—	2	—	2
Balance at June 29, 2018	312	3	(16)	(1,444)	4,254	(39)	8,757	11,531
Net loss	—	—	—	—	—	—	(754)	(754)
Employee stock plans	—	—	7	739	(736)	—	—	3
Adoption of new accounting standards	—	—	—	—	—	—	56	56
Stock-based compensation	—	—	—	—	306	—	—	306
Repurchases of common stock	—	—	(8)	(563)	—	—	—	(563)
Dividends to shareholders	—	—	—	—	27	—	(610)	(583)
Actuarial pension loss	—	—	—	—	—	(34)	—	(34)
Foreign currency translation adjustment	—	—	—	—	—	25	—	25
Net unrealized loss on derivative contracts	—	—	—	—	—	(20)	—	(20)
Balance at June 28, 2019	312	$ 3	(17)	$ (1,268)	$ 3,851	$ (68)	$ 7,449	$ 9,967

The accompanying notes are an integral part of these Consolidated Financial Statements.

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Organization and Basis of Presentation

Western Digital Corporation ("Western Digital" or "the Company") is a leading developer, manufacturer, and provider of data storage devices and solutions that address the evolving needs of the information technology ("IT") industry and the infrastructure that enables the proliferation of data in virtually every other industry. The Company creates environments for data to thrive. The Company is driving the innovation needed to help customers capture, preserve, access and transform an ever-increasing diversity of data. Everywhere data lives, from advanced data centers to mobile sensors to personal devices, the Company's industry-leading solutions deliver the possibilities of data.

The Company's broad portfolio of technology and products address the following key end markets: Client Devices; Data Center Devices and Solutions; and Client Solutions. It also generates license and royalty revenue from its extensive intellectual property ("IP"), which is included in each of these three end market categories.

Basis of Presentation

The Company has prepared its Consolidated Financial Statements in accordance with accounting principles generally accepted in the United States ("U.S. GAAP") and has adopted accounting policies and practices which are generally accepted in the industry in which it operates. The Company's significant accounting policies are summarized below.

Fiscal Year

The Company's fiscal year ends on the Friday nearest to June 30 and typically consists of 52 weeks. Approximately every five to six years, the Company reports a 53-week fiscal year to align the fiscal year with the foregoing policy. Fiscal years 2019, which ended on June 28, 2019, 2018, which ended on June 29, 2018, and 2017, which ended on June 30, 2017, are each comprised of 52 weeks, with all quarters presented consisting of 13 weeks. Fiscal year 2020, which ends on July 3, 2020, will be comprised of 53 weeks, with the first quarter consisting of 14 weeks and the remaining quarters consisting of 13 weeks each.

Basis of Consolidation

The Consolidated Financial Statements include the accounts of the Company and its wholly owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation. The functional currency of most of the Company's foreign subsidiaries is the U.S. dollar. The accounts of these foreign subsidiaries have been remeasured using the U.S. dollar as the functional currency. Gains or losses resulting from remeasurement of these accounts from local currencies into U.S. dollars were immaterial to the Consolidated Financial Statements. Financial statements of the Company's foreign subsidiaries for which the functional currency is the local currency are translated into U.S. dollars using the exchange rate at each balance sheet date for assets and liabilities and a weighted average exchange rate for each period for statement of operations items. Translation adjustments are recorded in accumulated other comprehensive income, a component of shareholders' equity.

Use of Estimates

Company management has made estimates and assumptions relating to the reporting of certain assets and liabilities in conformity with U.S. GAAP. These estimates and assumptions have been applied using methodologies that are consistent throughout the periods presented. However, actual results could differ materially from these estimates.

Cash Equivalents

The Company's cash equivalents represent highly liquid investments in money market funds, which are invested in U.S. Treasury securities and U.S. Government agency securities as well as bank certificates of deposit with original maturities at purchase of three months or less. Cash equivalents are carried at cost plus accrued interest, which approximates fair value.

Available-for-Sale Securities

From time to time, the Company invests in U.S. Treasury securities, U.S. and International Government agency securities, certificates of deposit, asset-backed securities, and corporate and municipal notes and bonds, with original maturities at purchase of more than three months. These investments are classified as available-for-sale securities and included within other non-current assets in the Consolidated Balance Sheets. Available-for-sale securities are stated at fair value with unrealized gains and losses included in accumulated other comprehensive income (loss), which is a component of shareholders' equity. Gains and losses on available-for-sale securities are recorded based on the specific identification method. The Company evaluates the available-for-sale securities in an unrealized loss position for other-than-temporary impairment. The amortized cost of available-for-sale securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization and accretion are included in Other income (expense), net in the Consolidated Statements of Operations. In addition, realized gains and losses are included in Other income (expense), net in the Consolidated Statements of Operations.

Equity Investments

In January 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-01, "Financial Instruments — Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities" ("ASU 2016-01"). ASU 2016-01 provides guidance related to accounting for equity investments, financial liabilities under the fair value option and the presentation and disclosure requirements for financial instruments. Marketable equity securities previously classified as available-for-sale equity investments are now measured and recorded at fair value with changes in fair value recorded within Other income (expense), net in the Consolidated Statements of Operations rather than as a component of Other comprehensive income as in prior years. In addition, the FASB clarified guidance related to the valuation allowance assessment when recognizing deferred tax assets resulting from unrealized losses on available-for-sale debt securities. The Company adopted this standard effective June 30, 2018. The adoption of this standard did not have a material impact on the Company's Consolidated Financial Statements.

The Company enters into certain strategic investments for the promotion of business and strategic objectives. The equity method of accounting is used if the Company's ownership interest is greater than or equal to 20% but less than a majority or where the Company has the ability to exercise significant influence over operating and financial policies. The Company's equity in the earnings or losses in equity-method investments is recognized in Other income (expense), net, in the Consolidated Statements of Operations.

If the Company's ownership interest is less than 20% and the Company does not have the ability to exercise significant influence over operating and financial policies of the investee, the Company accounts for these investments at fair value, or if these equity securities do not have a readily determinable fair value ("RDFV"), these securities are measured and recorded using the measurement alternative under ASU 2016-01, which is cost minus impairment, if any, plus or minus changes resulting from observable price changes. Previously, these investments were accounted for under the cost method of accounting. These investments are recorded within Other non-current assets in the Consolidated Balance Sheets and are periodically analyzed to determine whether or not there are indicators of impairment.

Variable Interest Entities

The Company evaluates its investments and other significant relationships to determine whether any investee is a variable interest entity ("VIE"). If the Company concludes that an investee is a VIE, the Company evaluates its power to direct the activities of the investee, its obligation to absorb the expected losses of the investee and its right to receive the expected residual returns of the investee to determine whether the Company is the primary beneficiary of the investee. If the Company is the primary beneficiary of a VIE, the Company consolidates such entity and reflects the non-controlling interest of other beneficiaries of that entity. The Company does not consolidate any cost method investment or equity method investment entities.

Fair Value of Financial Instruments

The carrying amounts of cash equivalents, accounts receivable, accounts payable and accrued expenses approximate fair value for all periods presented because of the short-term maturity of these assets and liabilities. The fair value of investments that are not accounted for under the equity method is based on appropriate market information.

Inventories

The Company values inventories at the lower of cost (first-in, first out) or net realizable value. The first-in, first-out ("FIFO") method is used to value the cost of the majority of the Company's inventories. Inventory write-downs are recorded for the valuation of inventory at the lower of cost or net realizable value by analyzing market conditions and estimates of future sales prices as compared to inventory costs and inventory balances.

The Company evaluates inventory balances for excess quantities and obsolescence on a regular basis by analyzing estimated demand, inventory on hand, sales levels and other information and reduces inventory balances to net realizable value for excess and obsolete inventory based on this analysis. Unanticipated changes in technology or customer demand could result in a decrease in demand for one or more of the Company's products, which may require a write down of inventory that could materially affect operating results.

Property, Plant and Equipment

Property and equipment are carried at cost less accumulated depreciation and amortization. The cost of property, plant and equipment is depreciated over the estimated useful lives of the respective assets. The Company's buildings are depreciated over periods ranging from fifteen to thirty-five years. The majority of the Company's machinery and equipment, software, and furniture and fixtures, are depreciated on a straight-line basis over a period of two to seven years. Leasehold improvements are amortized over the lesser of the estimated useful lives of the assets or the related lease terms.

Business Combinations

The application of acquisition accounting to a business combination requires that the Company identify the individual assets acquired and liabilities assumed and estimate the fair value of each. The fair value of assets acquired and liabilities assumed in a business acquisition are recognized at the acquisition date using a combination of valuation techniques, with the purchase price exceeding the fair values being recognized as goodwill. Determining fair value of identifiable assets, particularly intangibles, liabilities acquired and contingent obligations assumed requires management to make estimates. In certain circumstances, the allocations of the excess purchase price are based upon preliminary estimates and assumptions and subject to revision when the Company receives final information, including appraisals and other analyses. Accordingly, the measurement period for such purchase price allocations will end when the information, or the facts and circumstances, becomes available, but will not exceed twelve months. The Company will recognize measurement-period adjustments during the period of resolution, including the effect on earnings of any amounts that would have been recorded in previous periods if the accounting had been completed at the acquisition date.

Goodwill and intangible assets often represent a significant portion of the assets acquired in a business combination. The Company recognizes the fair value of an acquired intangible apart from goodwill whenever the intangible arises from contractual or other legal rights, or when it can be separated or divided from the acquired entity and sold, transferred, licensed, rented or exchanged, either individually or in combination with a related contract, asset or liability. Intangible assets consist primarily of technology, customer relationships, and trade name and trademarks acquired in business combinations and in-process research and development ("IPR&D"). The Company's assessment of IPR&D also includes consideration of the risk of the projects not achieving technological feasibility.

Goodwill and Other Long-Lived Assets

Goodwill is not amortized. Instead, it is tested for impairment on an annual basis or more frequently whenever events or changes in circumstances indicate that goodwill may be impaired. The Company performs an annual impairment test as of the beginning of its fiscal fourth quarter. The Company uses qualitative factors to determine whether goodwill is more likely than not impaired and whether a quantitative test for impairment is considered necessary. If the Company concludes from the qualitative assessment that goodwill is more likely than not impaired, the Company is required to perform a quantitative approach to determine the amount of impairment. The Company's assessment resulted in no impairment of goodwill in 2019, 2018, or 2017.

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The Company is required to use judgment when applying the goodwill impairment test, including the identification of reporting units, assignment of assets, liabilities and goodwill to reporting units, and determination of the fair value of each reporting unit. In addition, the estimates used to determine the fair value of reporting units may change based on results of operations, macroeconomic conditions or other factors. Changes in these estimates could materially affect the Company's assessment of the fair value and goodwill impairment. If the Company's stock price decreases significantly, goodwill could become impaired, which could result in a material charge and adversely affect the Company's results of operations.

IPR&D is an intangible asset accounted as an indefinite-lived asset until the completion or abandonment of the associated research and development effort. During the development period, the Company conducts an IPR&D impairment test annually and whenever events or changes in facts and circumstances indicate that it is more likely than not that the IPR&D is impaired. Events which might indicate impairment include, but are not limited to, adverse cost factors, strategic decisions made in response to economic, market, and competitive conditions, and the impact of the economic environment the Company and on its customer base. If impairment is indicated, the impairment is measured as the amount by which the carrying amount of the assets exceeds the fair value of the assets.

Other long-lived intangible assets are amortized over their estimated useful lives based on the pattern in which the economic benefits are expected to be received. Long-lived assets are tested for recoverability whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. If impairment is indicated, the impairment is measured as the amount by which the carrying amount of the assets exceeds the fair value of the assets. The estimates of fair value require evaluation of future market conditions and product lifecycles as well as projected revenue, earnings and cash flow. See Note 7, *Goodwill and Other Intangible Assets*, for additional disclosures related to the Company's other intangible assets.

Revenue and Accounts Receivable

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," which superseded the requirements in Accounting Standards Codification ("ASC") 605 "Revenue Recognition" (Topic 605). Topic 606 outlines a comprehensive five-step revenue recognition model based on the principle that an entity should recognize revenue when control of the promised goods or services is transferred to customers at an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. Topic 606 also requires more detailed disclosures to enable users of financial statements to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The Company adopted Topic 606 effective June 30, 2018, using the modified retrospective method to all contracts that were not completed contracts as of the beginning of the fiscal year. Results for reporting periods beginning with fiscal year 2019 are presented under Topic 606, while prior period information presented on the financial statements or elsewhere in this Annual Report on Form 10-K is reported under the Company's historic accounting policies under Topic 605 in effect for those periods and is not adjusted to reflect the retrospective effect of the adoption of Topic 606. The cumulative effect of adopting Topic 606 was a post-tax increase to the opening retained earnings of $56 million as of June 30, 2018, which was primarily related to our license and royalty revenue arrangements. These arrangements had no remaining performance obligations but were previously recognized under Topic 605 when they were reported to the Company by its licensees, which was generally one quarter in arrears from the licensees' sales of the licensed products. Adoption of the standard did not have a material impact on the Company's financial position, results of operations, and cash flows for the year ended June 28, 2019, and the Company expects that the impact of the adoption of the new standard will not be material to its results of operations prospectively.

The Company offers a broad range of data storage products that include Client Devices, Data Center Devices and Solutions, and Client Solutions. Client Devices consist of hard disk drives ("HDDs") and solid state drives ("SSDs") for computing devices; flash-based embedded storage products; and flash-based memory wafers. Data Center Devices and Solutions consist of high-capacity enterprise HDDs and high-performance enterprise SSDs, data center software and system solutions. Client Solutions consist of HDDs and SSDs embedded into external storage products and removable flash-based products. The Company also generates license and royalty revenue related to its IP patent licenses.

The Company recognizes revenue when it satisfies a performance obligation by transferring control over a product or service to the customer. The transaction price to be recognized as revenue is adjusted for variable consideration, such as sales incentives, and excludes amounts collected on behalf of third parties, including taxes imposed by governmental authorities. The Company's performance obligations are typically not constrained based on the Company's history with similar transactions and that uncertainties are resolved in a fairly short period of time.

Substantially all of the Company's revenue is from the sale of tangible products for which the performance obligations are satisfied at a point in time, generally upon delivery. The Company's services revenue mainly includes post contract customer support, warranty as a service and maintenance contracts. The performance obligations for the Company's services are generally satisfied ratably over the service period based on the nature of the service provided and contract terms. Similarly, revenue from patent licensing arrangements is recognized based on whether the arrangement provides the customer a right to use or right to access the IP. Revenue for a right to use arrangement is recognized at the time the control of the license is transferred to the customer. Revenue for a right to access arrangement is recognized over the contract period using the time lapse method. For the sales-based royalty arrangements, the Company estimates and recognizes revenue in the period in which customers' licensable sales occur.

The Company's customer payment terms are typically less than two months from the date control over the product or service is transferred to the customer. The Company uses the practical expedient and does not recognize a significant financing component for payment considerations of less than one year. The financing components of contracts with payment terms were not material.

The Company provides distributors and retailers (collectively referred to as "resellers") with limited price protection for inventories held by resellers at the time of published list price reductions and/or a right of return. The Company also provides resellers and original equipment manufacturers ("OEMs") with other sales incentive programs. The Company uses judgment in its assessment of variable consideration in contracts to be included in the transaction price. The Company uses the expected value method to arrive at the amount of variable consideration. The Company believes the estimate of variable consideration is not constrained and that the expected value method is the appropriate estimate of the amount of variable consideration based on the fact that the Company has a large number of contracts with similar characteristics. The Company's methodology for the estimates is based on several factors, including anticipated price decreases during the reseller holding period, resellers' sell-through and inventory levels, estimated amounts to be reimbursed to qualifying customers, historical pricing information, historical and anticipated returns information and customer claim processing. The Company also has programs under which it reimburses qualified distributors and retailers for certain marketing expenditures, which are typically recorded as a reduction of the transaction price and, therefore, of revenue. The Company nets sales rebates against open customer receivable balances if the criteria to offset are met, otherwise they are recorded within other accrued liabilities.

An immaterial amount of the Company's revenue arrangements include contracts that contain more than one performance obligation, which are typically comprised of tangible products, software and support services for multiple distinct licenses. For these contracts with multiple performance obligations, the Company evaluates whether each deliverable is a distinct promise and should be accounted for as a separate performance obligation. If a promised good or service is not distinct in accordance with the revenue guidance, the Company combines that good or service with the other promised goods or services in the arrangement until a distinct bundle of goods is identified. The Company allocates the transaction price to the performance obligations of each distinct product or service, or distinct bundle, based on their relative standalone selling prices. Where a separate standalone selling price is not available, the transaction price is based on the Company's best estimate of the standalone selling price. The Company uses one or a combination of more than one of the following methods to estimate the standalone selling price: the adjusted market assessment approach, the expected cost plus a margin approach, or another suitable method based on the facts and circumstances.

Contract assets represent the Company's rights to consideration where performance obligations are completed but the customer payments are not due until another performance obligation is satisfied. The Company did not have any contract assets as of either June 28, 2019 or the date of adoption of Topic 606.

The Company incurs sales commissions and other direct incremental costs to obtain sales contracts. The Company has applied the practical expedient to recognize the direct incremental costs of obtaining contracts as an expense when incurred if the amortization period is expected to be one year or less or the amount is not material, with these costs charged to selling, general and administrative expenses. Prior to the adoption of the new revenue standard, the Company's policy was to expense all contract acquisition costs as incurred. Other direct incremental costs to obtain contracts that have an expected benefit of greater than one year are amortized over the period of expected cash flows from the related contracts, and the amortization expense is recorded as a reduction to revenue. Total capitalized contract costs and the related amortization as of and for the year ended June 28, 2019 were not material.

Contract liabilities relate to customers' payments in advance of performance under the contract and primarily relate to remaining performance obligations under support and maintenance contracts. As of June 28, 2019 and the date of adoption of Topic 606, contract liabilities were $43 million and $120 million, respectively, and were reflected in Accrued expenses. Changes in the contract liability balance during the year ended June 28, 2019 include $104 million of revenue recognized during the period, of which the substantial majority relates to the balance that was deferred at June 29, 2018, partially offset by payments received and billings in advance of satisfying performance obligations.

The Company applies the practical expedients and does not disclose transaction price allocated to the remaining performance obligations for (i) arrangements that have an original expected duration of one year or less, which mainly consist of the support and maintenance contracts, and (ii) variable consideration amounts for sale-based or usage-based royalties for IP license arrangements, which typically range longer than one year. Remaining performance obligations are mainly attributed to right-to-access patent license arrangements and customer support and service contracts which will be recognized over the remaining contract period. The transaction price allocated to the remaining performance obligations as of June 28, 2019 was $191 million, which is mainly attributable to the functional IP license and service arrangements. The Company expects to recognize this amount as revenue as follows: $65 million in fiscal 2020, $48 million in fiscal 2021, $44 million in fiscal 2022, and $34 million thereafter.

The Company records an allowance for doubtful accounts by analyzing specific customer accounts and assessing the risk of loss based on insolvency, disputes or other collection issues. In addition, the Company routinely analyzes the different receivable aging categories and establishes reserves based on a combination of past due receivables and expected future losses based primarily on its historical levels of bad debt losses. If the financial condition of a significant customer deteriorates resulting in its inability to pay its accounts when due, or if the Company's overall loss history changes significantly, an adjustment in the Company's allowance for doubtful accounts would be required, which could materially affect operating results.

Warranty

The Company records an accrual for estimated warranty costs when revenue is recognized. The Company generally warrants its products for a period of one to five years, with a small number of products having a warranty ranging up to ten years or more. The warranty provision considers estimated product failure rates and trends, estimated replacement costs, estimated repair costs which include scrap costs and estimated costs for customer compensatory claims related to product quality issues, if any. For warranties ten years or greater, including lifetime warranties, the Company uses the estimated useful life of the product to calculate the warranty exposure. A statistical warranty tracking model is used to help prepare estimates and assist the Company in exercising judgment in determining the underlying estimates. The statistical tracking model captures specific detail on product reliability, such as factory test data, historical field return rates and costs to repair by product type. Management's judgment is subject to a greater degree of subjectivity with respect to newly introduced products because of limited field experience with those products upon which to base warranty estimates. Management reviews the warranty accrual quarterly for products shipped in prior periods and which are still under warranty. Any changes in the estimates underlying the accrual may result in adjustments that impact current period gross profit and income. Such changes are generally a result of differences between forecasted and actual return rate experience and costs to repair and could differ significantly from the estimates.

Litigation and Other Contingencies

When the Company becomes aware of a claim or potential claim, the Company assesses the likelihood of any loss or exposure. The Company discloses information regarding each material claim where the likelihood of a loss contingency is probable or reasonably possible. If a loss contingency is probable and the amount of the loss can be reasonably estimated, the Company records an accrual for the loss. In such cases, there may be an exposure to potential loss in excess of the amount accrued. Where a loss is not probable but is reasonably possible or where a loss in excess of the amount accrued is reasonably possible, the Company discloses an estimate of the amount of the loss or range of possible losses for the claim if a reasonable estimate can be made, unless the amount of such reasonably possible losses is not material to the Company's financial position, results of operations or cash flows. The ability to predict the ultimate outcome of such matters involves judgments, estimates and inherent uncertainties. The actual outcome of such matters could differ materially from management's estimates. See Note 16, *Legal Proceedings,* for additional disclosures related to the Company's litigation.

Advertising Expense

Advertising costs are expensed as incurred and amounted to $107 million, $112 million and $89 million in 2019, 2018 and 2017, respectively. These expenses are included in Selling, general and administrative ("SG&A") in the Consolidated Statements of Operations.

Research and Development Expense

Research and development ("R&D") expenditures are expensed as incurred.

Income Taxes

The Company accounts for income taxes under the asset and liability method, which provides that deferred tax assets and liabilities be recognized for temporary differences between the financial reporting basis and the tax basis of assets and liabilities and expected benefits of utilizing net operating loss ("NOL") and tax credit carryforwards. The Company records a valuation allowance when it is more likely than not that the deferred tax assets will not be realized. Each quarter, the Company evaluates the need for a valuation allowance for its deferred tax assets and adjusts the valuation allowance so that the Company records net deferred tax assets only to the extent that it has concluded it is more likely than not that these deferred tax assets will be realized. The Company accounts for interest and penalties related to income taxes as a component of the provision for income taxes.

The Company recognizes liabilities for uncertain tax positions based on a two-step process. To the extent a tax position does not meet a more-likely-than-not level of certainty, no benefit is recognized in the financial statements. If a position meets the more-likely-than-not level of certainty, it is recognized in the financial statements at the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. Interest and penalties related to unrecognized tax benefits are recognized in liabilities recorded for uncertain tax positions and are recorded in the provision for income taxes. The actual liability for unrealized tax benefits in any such contingency may be materially different from the Company's estimates, which could result in the need to record additional liabilities for unrecognized tax benefits or potentially adjust previously-recorded liabilities for unrealized tax benefits, and may materially affect the Company's operating results.

Income per Common Share

The Company computes basic income per common share using net income and the weighted average number of common shares outstanding during the period. Diluted income per common share is computed using net income and the weighted average number of common shares and potentially dilutive common shares outstanding during the period. Potentially dilutive common shares include dilutive outstanding employee stock options, restricted stock unit awards ("RSUs"), performance-based restricted stock unit awards ("PSUs"), rights to purchase shares of common stock under the Company's Employee Stock Purchase Plan ("ESPP") and shares issuable in connection with convertible debt.

Stock-based Compensation

The Company accounts for all stock-based compensation at fair value. Stock-based compensation cost is measured at the grant date based on the value of the award and is recognized as expense over the vesting period. The fair values of all stock options granted are estimated using a binomial option-pricing model, and the fair values of all ESPP purchase rights are estimated using the Black-Scholes-Merton option-pricing model. Both the binomial and the Black-Scholes-Merton option-pricing models require the input of highly subjective assumptions. PSUs are granted to certain employees and vest only after the achievement of pre-determined performance metrics. Once the performance metrics are met, vesting of PSUs is subject to continued service by the employee. At the end of each reporting period, the Company evaluates the probability that PSUs will be earned. The Company records stock-based compensation expense based on the probability that the performance metrics will be achieved over the vesting period.

Other Comprehensive Income (Loss), Net of Tax

Other comprehensive income (loss), net of tax refers to revenue, expenses, gains and losses that are recorded as an element of shareholders' equity but are excluded from net income. The Company's other comprehensive income (loss), net of tax is comprised of unrealized gains or losses on foreign exchange contracts and interest rate swap agreements designated as cash flow hedges, available-for-sale securities, foreign currency translation, and actuarial gains or losses related to pensions.

Derivative Contracts

The majority of the Company's transactions are in U.S. dollars; however, some transactions are based in various foreign currencies. The Company purchases foreign exchange contracts to hedge the impact of foreign currency exchange fluctuations on certain underlying assets, liabilities and commitments for operating expenses and product costs denominated in foreign currencies. The purpose of entering into these hedging transactions is to minimize the impact of foreign currency fluctuations on the Company's results of operations. Substantially all of these contract maturity dates do not exceed 12 months. All foreign exchange contracts are for risk management purposes only. The Company does not purchase foreign exchange contracts for speculative or trading purposes. The Company had foreign exchange contracts with commercial banks for British pound sterling, European euro, Japanese yen, Malaysian ringgit, Philippine peso, Singapore dollar and Thai baht, which had an aggregate notional amount of $5.71 billion and $4.37 billion at June 28, 2019 and June 29, 2018, respectively.

If the derivative is designated as a cash flow hedge, the effective portion of the change in fair value of the derivative is initially deferred in Other comprehensive income (loss), net of tax. These amounts are subsequently recognized into earnings when the underlying cash flow being hedged is recognized into earnings. Recognized gains and losses on foreign exchange contracts are reported in cost of revenue and operating expenses, and presented within cash flows from operating activities. The Company accounts for its interest rate swaps as designated cash flow hedges to mitigate variations in interest payments under a portion of its LIBOR-based term loans due to variations in the LIBOR index. The Company pays interest monthly at a fixed rate and receives interest monthly at the LIBOR rate on the notional amount of the contract with realized gains or losses recognized in interest expense. Hedge effectiveness is measured by comparing the hedging instrument's cumulative change in fair value from inception to maturity to the underlying exposure's terminal value. The Company determined the ineffectiveness associated with its cash flow hedges to be immaterial to the Consolidated Financial Statements for all years presented.

A change in the fair value of undesignated hedges is recognized in earnings in the period incurred and is reported in Other income (expense), net.

Pensions and Other Post-Retirement Benefit Plans

The Company has defined benefit pension plans and other post-retirement plans covering certain employees in various countries. The benefits are based on the employees' years of service and compensation. The plans are funded in conformity with the funding requirements of applicable government authorities. The Company amortizes unrecognized actuarial gains and losses and prior service costs on a straight-line basis over the remaining estimated average service life of the participants. The measurement date for the plans is the Company's fiscal year-end. The Company recognizes the funded status of its defined benefit pension and post-retirement plans in the Consolidated Balance Sheets, with actuarial changes in the funded status recognized through accumulated other comprehensive income (loss) in the year in which such changes occur.

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

In March 2017, the FASB issued ASU No. 2017-07, "Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost" ("ASU 2017-07"). ASU 2017-07 requires that the Company report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period with application applied retrospectively. In addition, the other components of net benefit cost are now presented prospectively in Other income (expense), net in the Consolidated Statements of Operations. The Company adopted this standard effective June 30, 2018. The adoption of this standard did not have a material impact on the Company's Consolidated Financial Statements.

Note 2. Recent Accounting Pronouncements

Accounting Pronouncements Recently Adopted

On August 29, 2018, the FASB issued ASU No. 2018-15, “Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract” (“ASU 2018-15”), to reduce diversity in practice in accounting for the costs of implementing cloud computing arrangements that are service contracts. ASU 2018-15 allows entities to apply the guidance in the FASB ASC 350-40 to determine which implementation costs are eligible to be capitalized as assets in a cloud computing arrangement that is considered a service contract. The Company adopted this standard on a prospective basis effective June 30, 2018, the beginning of fiscal year 2019, as allowed by the standard. The adoption of this standard and the costs capitalized for the year ended June 28, 2019 were not material to the Company’s Consolidated Financial Statements.

In February 2018, the FASB issued ASU No. 2018-02, “Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income” (“ASU 2018-02”). ASU 2018-02 allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act enacted on December 22, 2017 (the “2017 Act”). Consequently, the amendments eliminate the stranded tax effects resulting from the 2017 Act and will improve the usefulness of information reported to financial statement users. Because the amendments only relate to the reclassification of the income tax effects of the 2017 Act, the underlying guidance that requires that the effect of a change in tax laws or rates be included in income from continuing operations is not affected. For tax effects that are unrelated to the 2017 Act, the Company’s policy to release these from Accumulated other comprehensive loss on an individual item basis rather than a portfolio basis remains unchanged. The Company early adopted this standard effective June 30, 2018 and elected to reclassify stranded tax effects resulting from the 2017 Act from Accumulated other comprehensive loss to Retained earnings. The adoption of this standard did not have a material impact on the Company’s Consolidated Financial Statements.

In August 2017, the FASB issued ASU No. 2017-12, “Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities” (“ASU 2017-12”). ASU 2017-12 simplifies hedge accounting through changes to both designation and measurement requirements. For hedges that qualify as highly effective, the new standard eliminates the requirement to separately measure and record hedge ineffectiveness with the entire change in fair value of designated hedge reported in the results of operations in the same line item as the hedged item. The Company early adopted this standard effective June 30, 2018, using the modified retrospective approach. The adoption of this standard did not have a material impact on the Company’s Consolidated Financial Statements.

In May 2017, the FASB issued ASU No. 2017-09, “Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting” (“ASU 2017-09”). ASU 2017-09 provides clarification when a change to the terms or conditions of a share-based payment award must be accounted for as a modification. The new guidance requires modification accounting if the fair value, vesting condition or the classification of the award is not the same immediately before and after a change to the terms and conditions of the award. The Company adopted this standard on a prospective basis effective June 30, 2018. The adoption of this standard did not have a material impact on the Company’s Consolidated Financial Statements.

In January 2017, the FASB issued ASU No. 2017-01, “Business Combinations (Topic 805): Clarifying the Definition of a Business” (“ASU 2017-01”). ASU 2017-01 narrows the definition of a “business.” This standard provides guidance to assist entities with evaluating when a set of transferred assets and activities is a business. The Company adopted this standard effective June 30, 2018 and will apply it prospectively to transactions occurring thereafter. The adoption of this standard did not have a material impact on the Company’s Consolidated Financial Statements.

In October 2016, the FASB issued ASU No. 2016-16, “Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory” (“ASU 2016-16”). ASU 2016-16 removes the prohibition in the FASB ASC Topic 740 against the immediate recognition of the current and deferred income tax effects of intra-entity transfers of assets other than inventory. The new standard is intended to reduce the complexity and diversity in practice related to the tax consequences of certain types of intra-entity asset transfers, particularly those involving intellectual property (“IP”). The Company adopted this standard effective June 30, 2018. The adoption of this standard did not have a material impact on the Company’s Consolidated Financial Statements.

Recently Issued Accounting Pronouncements Not Yet Adopted

In November 2018, the FASB issued ASU No. 2018-18, "Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606" ("ASU 2018-18"). ASU 2018-18 clarifies that certain transactions between collaborative arrangement participants should be accounted for as revenue when the collaborative arrangement participant is a customer in the context of a unit of account and precludes recognizing as revenue consideration received from a collaborative arrangement participant if the participant is not a customer. This ASU requires retrospective adoption to the date the Company adopted ASC 606 by recognizing a cumulative-effect adjustment to the opening balance of retained earnings of the earliest annual period presented. The amendments are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019, which for the Company is the first quarter of fiscal 2021. The Company does not expect this update to have a material impact on its Consolidated Financial Statements.

In October 2018, the FASB issued ASU No. 2018-16, "Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes" ("ASU 2018-16"). ASU 2018-16 allows for the use of the OIS rate based on the SOFR as a U.S. benchmark interest rate for hedge accounting purposes under Topic 815, Derivatives and Hedging. For public entities who have adopted ASU 2017-12, the amendments are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018, which for the Company is the first quarter of fiscal 2020. The Company does not expect this update to have a material impact on its Consolidated Financial Statements.

In June 2016, the FASB issued ASU No. 2016-13, "Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments" ("ASU 2016-13"). ASU 2016-13 seeks to provide financial statement users with more decision-useful information about the expected credit losses on financial instruments, including trade receivables, and other commitments to extend credit held by a reporting entity at each reporting date. The amendments require an entity to replace the incurred loss impairment methodology in current U.S. GAAP with a methodology that reflects current expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The amendments are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019, which for the Company is the first quarter of fiscal 2021. The Company is currently evaluating the impact this update will have on its Consolidated Financial Statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)" ("ASU 2016-02"). ASU 2016-02 supersedes ASC 840 "Leases". The amendments in this update require, among other things, that lessees recognize the following for all leases (unless a policy election is made by class of underlying asset to exclude short-term leases) at the commencement date: (1) a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and (2) a right-of-use asset, which is an asset that represents the lessee's right to use, or the direct use of, a specified asset for the lease term. The FASB issued ASU 2018-11 on July 30, 2018, which allows entities to apply the provisions of ASC 842 at the effective date without adjusting comparative periods. The standard is effective for interim and annual reporting periods beginning after December 15, 2018 and provides a package of practical expedients to simplify transition. The Company will adopt this standard in the first quarter of fiscal 2020 and will elect the transition method provided in ASU 2018-11 to apply Topic 842 as of the date of adoption without adjusting comparative periods. The Company will elect the package of practical expedients and will not reassess prior conclusions including (a) whether its contracts are or contain a lease, (b) lease classification and (c) capitalization of initial direct costs. The Company currently expects the adoption of Topic 842 to result in an increase in lease assets and a corresponding increase in lease liabilities on our Consolidated Balance Sheet of approximately $220 million to $240 million. Upon adoption, the Company will provide expanded financial statement disclosures related to leases.

Note 3. Supplemental Financial Statement Data

Accounts receivable, net

From time to time, in connection with factoring agreements, the Company sells trade accounts receivable without recourse to third party purchasers in exchange for cash. During 2019 and 2018, the Company sold trade accounts receivable and received cash proceeds of $1.02 billion and $57 million, respectively. The discounts on the trade accounts receivable sold during the periods were not material and were recorded within Other income (expense), net in the Consolidated Financial Statements. As of June 28, 2019 and June 29, 2018, the amount of factored receivables that remained outstanding was $318 million and $57 million, respectively.

Inventories

	June 28, 2019	June 29, 2018
	(in millions)	
Inventories:		
Raw materials and component parts	$ 1,142	$ 1,048
Work-in-process	968	878
Finished goods	1,173	1,018
Total inventories	$ 3,283	$ 2,944

Property, plant and equipment, net

	June 28, 2019	June 29, 2018
	(in millions)	
Property, plant, and equipment:		
Land	$ 294	$ 306
Buildings and improvements	1,743	1,949
Machinery and equipment	7,267	7,209
Computer equipment and software	441	440
Furniture and fixtures	56	48
Construction-in-process	202	234
Property, plant and equipment, gross	10,003	10,186
Accumulated depreciation	(7,160)	(7,091)
Property, plant, and equipment, net	$ 2,843	$ 3,095

Depreciation expense of property, plant and equipment totaled $844 million, $871 million and $960 million in 2019, 2018 and 2017, respectively.

Product warranty liability

Changes in the warranty accrual were as follows:

	2019	2018	2017
		(in millions)	
Warranty accrual, beginning of period	$ 318	$ 311	$ 279
Charges to operations	162	176	177
Utilization	(142)	(151)	(151)
Changes in estimate related to pre-existing warranties	12	(18)	6
Warranty accrual, end of period	$ 350	$ 318	$ 311

The current portion of the warranty accrual is classified in Accrued expenses and the long-term portion is classified in Other liabilities as noted below:

	2019	2018
	(in millions)	
Warranty accrual		
Current portion	$ 188	$ 168
Long-term portion	162	150
Total warranty accrual	$ 350	$ 318

Other liabilities

	2019	2018
	(in millions)	
Other non-current liabilities:		
Non-current net tax payable	$ 928	$ 1,315
Payables related to unrecognized tax benefits	699	508
Other non-current liabilities	713	432
Total other non-current liabilities	$ 2,340	$ 2,255

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Accumulated other comprehensive income (loss)

Other comprehensive income (loss) ("OCI"), net of tax refers to expenses, gains and losses that are recorded as an element of shareholders' equity but are excluded from net income. The following table illustrates the changes in the balances of each component of Accumulated other comprehensive income (loss) ("AOCI"):

	Actuarial Pension Gains (Losses)	Foreign Currency Translation Adjustment	Unrealized Gains (Losses) on Derivative Contracts and available-for-sale securities	Total Accumulated Comprehensive Income (Loss)
	(in millions)			
Balance at July 1, 2017	$ (18)	$ (39)	$ (1)	$ (58)
Other comprehensive income (loss) before reclassifications	(2)	18	25	41
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	(18)	(18)
Income tax benefit (expense) related to items of other comprehensive income (loss)	1	—	(5)	(4)
Net current-period other comprehensive income (loss)	(1)	18	2	19
Balance at June 29, 2018	(19)	(21)	1	(39)
Other comprehensive income (loss) before reclassifications	(39)	28	(48)	(59)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	9	9
Income tax benefit (expense) related to items of other comprehensive income (loss)	5	(3)	19	21
Net current-period other comprehensive loss	(34)	25	(20)	(29)
Balance at June 28, 2019	$ (53)	$ 4	$ (19)	$ (68)

During 2019, 2018 and 2017, the amounts reclassified out of AOCI related to derivative contracts were not material and substantially all were charged to Cost of revenue in the Consolidated Statements of Operations.

Note 4. Fair Value Measurements and Investments

The Company’s total cash, cash equivalents and available-for-sale securities was as follows:

	June 28, 2019	June 29, 2018
	(in millions)	
Cash and cash equivalents	$ 3,455	$ 5,005
Short-term available-for-sale securities (included within Other current assets)	—	23
Long-term available-for-sale securities (included within Other non-current assets)	—	93
Total cash, cash equivalents and available-for-sale securities	$ 3,455	$ 5,121

Financial Instruments Carried at Fair Value

Financial assets and liabilities that are remeasured and reported at fair value at each reporting period are classified and disclosed in one of the following three levels:

Level 1. Quoted prices in active markets for identical assets or liabilities.

Level 2. Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3. Inputs that are unobservable for the asset or liability and that are significant to the fair value of the assets or liabilities.

The following tables present information about the Company’s financial assets and liabilities that are measured at fair value on a recurring basis as of June 28, 2019 and June 29, 2018, and indicate the fair value hierarchy of the valuation techniques utilized to determine such values:

	June 28, 2019			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Assets:				
Cash equivalents:				
Money market funds	$ 1,388	$ —	$ —	$ 1,388
Certificates of deposit	—	17	—	17
Total cash equivalents	1,388	17	—	1,405
Foreign exchange contracts	—	44	—	44
Interest rate swap contracts	—	2	—	2
Total assets at fair value	$ 1,388	$ 63	$ —	$ 1,451
Liabilities:				
Foreign exchange contracts	$ —	$ 40	$ —	$ 40
Interest rate swap contract	—	65	—	65
Total liabilities at fair value	$ —	$ 105	$ —	$ 105

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

	June 29, 2018			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Assets:				
Cash equivalents:				
Money market funds	$ 2,554	$ —	$ —	$ 2,554
Certificates of deposit	—	4	—	4
Total cash equivalents	2,554	4	—	2,558
Short-term available-for-sale securities:				
U.S. Treasury securities	3	—	—	3
Corporate notes and bonds	—	12	—	12
Asset-backed securities	—	4	—	4
Municipal notes and bonds	—	2	—	2
Equity securities	2	—	—	2
Total short-term available-for-sale securities	5	18	—	23
Long-term available-for-sale securities:				
U.S. Treasury securities	3	—	—	3
U.S. Government agency securities	—	5	—	5
International government securities	—	1	—	1
Corporate notes and bonds	—	65	—	65
Asset-backed securities	—	8	—	8
Municipal notes and bonds	—	11	—	11
Total long-term available-for-sale securities	3	90	—	93
Foreign exchange contracts	—	51	—	51
Interest rate swap contracts	—	16	—	16
Total assets at fair value	$ 2,562	$ 179	$ —	$ 2,741
Liabilities:				
Foreign exchange contracts	$ —	$ 28	$ —	$ 28

Money Market Funds. The Company's money market funds are funds that invest in U.S. Treasury and U.S. Government agency securities. Money market funds are valued based on quoted market prices.

Certificates of Deposit. The Company's certificates of deposit are investments which are held in custody by a third party. Certificates of deposit are valued using fixed interest rates.

Foreign Exchange Contracts. The Company's foreign exchange contracts are short-term contracts to hedge the Company's foreign currency risk. Foreign exchange contracts are valued using an income approach that is based on a present value of future cash flows model. The market-based observable inputs for the model include forward rates and credit default swap rates. For more information on the Company's foreign exchange contracts, see Note 5, *Derivative Instruments and Hedging Activities*. Derivative assets and liabilities are reflected in the Company's Consolidated Balance Sheet under Other current assets and Accrued expenses, respectively.

Interest Rate Swaps. The Company's interest rate swaps are long-term contracts to hedge the Company's variable rate debt risk. Interest rate swaps are valued based on estimated present value of future cash flows model. The market-based observable inputs for the model include interest rate curves and credit valuation adjustments.

During 2019 and 2018, the Company had no transfers of financial assets and liabilities between levels.

Available-for-Sale Securities

The Company sold substantially all of its available-for-sale securities during fiscal 2019. The cost basis of the Company's investments classified as available-for-sale securities, individually and in the aggregate, approximated its fair value as of June 29, 2018.

Financial Instruments Not Carried at Fair Value

The carrying value of the Company's revolving credit facility approximates its fair value given the revolving nature of the balance and the variable market interest rate. For financial instruments where the carrying value (which includes principal adjusted for any unamortized issuance costs, and discounts or premiums) differs from fair value (which is based on quoted market prices), the following table represents the related carrying value and fair value for each of the Company's outstanding financial instruments. Each of the financial instruments presented below was categorized as Level 2 for all periods presented, based on the frequency of trading immediately prior to the end of the fourth quarter of 2019 and the fourth quarter of 2018, respectively.

	June 28, 2019		June 29, 2018	
	Carrying Value	Fair Value	Carrying Value	Fair Value
	(in millions)			
0.50% convertible senior notes due 2020	$ 33	$ 31	$ 31	$ 34
Variable interest rate Term Loan A-1 maturing 2023	4,824	4,780	4,982	5,013
Variable interest rate U.S. Term Loan B-4 maturing 2023	2,424	2,370	2,448	2,452
1.50% convertible notes due 2024	958	986	931	1,114
4.750% senior unsecured notes due 2026	2,283	2,263	2,280	2,238
Total	$ 10,522	$ 10,430	$ 10,672	$ 10,851

Note 5. Derivative Instruments and Hedging Activities

As of June 28, 2019, the Company had outstanding foreign exchange forward contracts that were designated as either cash flow hedges or non-designated hedges. Substantially all of the contract maturity dates of these foreign exchange forward contracts do not exceed 12 months. In addition, the Company had outstanding pay-fixed interest rate swaps that were designated as cash flow hedges of variable rate interest payments on a portion of its term loans through February 2023.

As of June 28, 2019, the amount of existing net losses related to cash flow hedges recorded in AOCI included $54 million related to its interest rate swaps that is expected to be reclassified to earnings after twelve months. In addition, as of June 28, 2019, the Company did not have any foreign exchange forward contracts with credit-risk-related contingent features.

Changes in fair values of the non-designated foreign exchange contracts are recognized in Other income (expense), net and are largely offset by corresponding changes in the fair values of the foreign currency denominated monetary assets and liabilities. During 2019, 2018 and 2017, total net realized and unrealized transaction and foreign exchange contract currency gains and losses were not material to the Company’s Consolidated Financial Statements.

See Note 4, *Fair Value Measurements and Investments*, for additional disclosures related to the fair value of the Company’s derivative contracts.

Netting Arrangements

Under certain provisions and conditions within agreements with counterparties to the Company’s foreign exchange forward contracts, subject to applicable requirements, the Company has the right of offset associated with the Company’s foreign exchange forward contracts and is allowed to net settle transactions of the same currency with a single net amount payable by one party to the other. As of June 28, 2019 and June 29, 2018, the effect of rights of offset was not material and the Company did not offset or net the fair value amounts of derivative instruments in its Consolidated Balance Sheets.

Note 6. Debt

Debt consisted of the following as of June 28, 2019 and June 29, 2018:

	June 28, 2019	June 29, 2018
	(in millions)	
0.50% convertible senior notes due 2020	$ 35	$ 35
Revolving credit facility maturing 2023	—	500
Variable interest rate Term Loan A-1 maturing 2023	4,834	4,991
Variable interest rate U.S. Term Loan B-4 maturing 2023	2,425	2,449
1.50% convertible notes due 2024	1,100	1,100
4.750% senior unsecured notes due 2026	2,300	2,300
Total debt	10,694	11,375
Issuance costs and debt discounts	(172)	(203)
Subtotal	10,522	11,172
Less current portion of long-term debt	(276)	(179)
Long-term debt	$ 10,246	$ 10,993

The Company has a credit agreement originally entered into on April 29, 2016 and most recently amended in April 2019 (as amended, the “Credit Agreement”), that provides for, among other things, (i) a $2.25 billion revolving credit facility maturing in 2023 (the “Revolving Facility”), (ii) a term loan A-1 due 2023 (the “Term Loan A-1”), and (iii) a term loan B-4 due April 29, 2023 (the “Term Loan B-4”).

Borrowings under the revolving credit facility bear interest at a rate equal to, at the Company’s option, either an adjusted London Interbank Offered Rate (“LIBOR”) rate, subject to a 0.00% floor, plus an applicable margin varying from 1.125% to 2.000% or a base rate plus an applicable margin varying from 0.125% to 1.000%, in each case depending on the Company’s corporate credit ratings. During 2018, the Company repaid the previously outstanding borrowings under its revolving credit facility. At June 28, 2019, the Company’s borrowing capacity under the revolving credit facility was $2.25 billion.

The Term Loan A-1 bears interest at a rate equal to, at the Company’s option, either an adjusted London Interbank Offered Rate (“LIBOR”) rate, subject to a 0.00% floor, plus an applicable margin varying from 1.125% to 2.000% or a base rate plus an applicable margin varying from 0.125% to 1.000%, in each case depending on the Company’s corporate credit ratings. Currently the Company has selected the LIBOR rate option, and the applicable rate was 3.90% as of June 28, 2019. Principal payments are due in quarterly installments of 1.250% per quarter through December 2022, with the remaining balance payable on February 27, 2023. The Term Loan A-1 issuance costs are amortized to interest expense over the term of the loan, and as of June 28, 2019, issuance costs of $10 million remained unamortized.

The U.S. Term Loan B-4 bears interest at a rate equal to, at the Company’s option, either an adjusted LIBOR rate, subject to a 0.00% floor, plus 1.75% or a base rate plus 0.75%. Currently the Company has selected the LIBOR rate option, and the applicable interest rate was 4.15% as of June 28, 2019. Principal payments on U.S. Term Loan B-4 of 0.25% are due quarterly with the balance due on April 29, 2023. The U.S. Term Loan B-4 issuance costs are amortized to interest expense over the term of the loan and as of June 28, 2019, issuance costs of $1 million remained unamortized.

In February 2018, the Company issued $1.10 billion aggregate principal amount of convertible senior notes due February 1, 2024 (the “2024 Convertible Notes”). The 2024 Convertible Notes bear interest at an annual rate of 1.50% with interest payable on February 1 and August 1 of each year. The Company is not required to make principal payments on the 2024 Convertible Notes prior to the maturity date. The 2024 Convertible Notes are jointly and severally guaranteed by certain material domestic subsidiaries of the Company.

The 2024 Convertible Notes are convertible into cash, shares of the Company's common stock, or a combination thereof at an initial conversion price of approximately $121.91 per share of common stock. Holders of the 2024 Convertible Notes may freely convert their 2024 Convertible Notes on or after November 1, 2023 until the close of business on the business day immediately preceding the maturity date. Prior to November 1, 2023, holders may convert their 2024 Convertible Notes based on variations in market price of the Company's common stock in relation to the conversion price or the trading price of the 2024 Convertible Notes or upon the occurrence of specified corporate events. On or after February 5, 2021, the Company may redeem all or part of the 2024 Convertible Notes, at its option, if the market price of the Company's stock achieves certain levels.

The Company separately accounts for the liability and equity components of the 2024 Convertible Notes. The value of the liability component as of the date of issuance was recognized at the present value of its cash flows using a discount rate of 4.375%, the Company's borrowing rate at the date of the issuance for a similar debt instrument without the conversion feature, resulting in a debt discount of $165 million, which was allocated to equity as the value of the conversion feature. The 2024 Convertible Notes debt issuance costs were approximately $18 million, of which $15 million was allocated to the debt component and $3 million was allocated to equity. The debt discount and issuance costs are amortized to interest expense over the term of the 2024 Convertible Notes. As of June 28, 2019, debt discount and issuance cost of $142 million remained unamortized.

In February 2018, the Company issued $2.30 billion aggregate principal amount of senior unsecured notes due February 15, 2026 (the "2026 Senior Unsecured Notes"). The 2026 Senior Unsecured Notes bear interest at an annual rate of 4.750% with interest payable on February 15 and August 15 of each year. The Company is not required to make principal payments on the 2026 Senior Unsecured Notes prior to the maturity date. The 2026 Senior Unsecured Notes are jointly and severally guaranteed by certain material domestic subsidiaries of the Company. The 2026 Senior Unsecured Notes issuance costs are amortized to interest expense over the term of the 2026 Senior Unsecured Notes and as of June 28, 2019, issuance costs of $17 million remained unamortized.

The Company assumed the 0.5% convertible senior notes due November 15, 2020 (the "2020 Convertible Notes") in connection with its acquisition of SanDisk Corporation ("SanDisk"), pursuant to an Agreement and Plan of Merger (the "Merger"), on May 12, 2016 (the "SanDisk Closing Date"). As of June 28, 2019, $35 million principal amount of the 2020 Convertible Notes was outstanding and had a conversion rate of 10.9006 units of reference property per $1,000 principal amount of the 2020 Convertible Notes, corresponding to 2.6020 shares of the Company's common stock and $735.79 of cash, subject to adjustments under the indenture. The 2020 Convertible Notes are not currently exchangeable into reference property. The 2020 Convertible Notes issuance costs are amortized to interest expense over the term of the 2020 Convertible Notes and as of June 28, 2019, issuance costs of $2 million remained unamortized.

The Revolving Facility, Term Loan A-1 and Term Loan B-4 are unconditionally guaranteed by each of the guarantors under the Credit Agreement and are secured on a first-priority basis (subject to permitted liens) by a lien on the same collateral that secure the other loans under the Credit Agreement; provided that the security and guarantees will be automatically suspended upon certain conditions.

The Credit Agreement requires the Company to comply with certain financial covenants with respect to the Revolving Facility and Term Loan A-1, consisting of a Leverage Ratio and an Interest Coverage Ratio (each as defined below). These covenants are based upon a trailing twelve-month consolidated adjusted EBITDA as defined in the Credit Agreement ("Adjusted EBITDA"). Adjusted EBITDA is defined as net income (loss) plus interest expense, income tax expense (benefit) and depreciation and amortization as well as other contractual adjustments as provided for in the Credit Agreement.

In April 2019, the Company amended the Credit Agreement for the purposes of providing additional flexibility by adjusting the leverage ratio maintenance covenant levels applicable to the Term Loan A-1 and Revolving Facility thereunder and amending the definition of Consolidated Adjusted EBITDA under the financial maintenance covenants to include an addback for certain depreciation related payments with respect to the Company's Flash Ventures. As amended, the Company is now required to maintain a maximum ratio of total funded debt to trailing twelve-month Adjusted EBITDA ("Leverage Ratio") at the end of each quarter of 4.25 to 1.00 through the quarter ending October 2, 2020, 4.00 to 1.00 through the quarter ending July 2, 2021, 3.75 to 1.00 through the quarter ending December 31, 2021, 3.50 to 1.00 through the quarter ending July 1, 2022, and 3.25 to 1.00 thereafter. In addition, the Company is required to maintain a minimum ratio of Adjusted EBITDA to interest expense ("Interest Coverage Ratio"), both calculated on a trailing twelve-month basis, at the end of each quarter of 3.50 to 1.00. As of June 28, 2019, the Company was in compliance with all financial covenants under the Credit Agreement.

The Credit Agreement also requires the Company and its subsidiaries to comply with customary covenants that include, among others, limitations on the incurrence of additional debt, liens on property, acquisitions and investments, loans and guarantees, mergers, consolidations, liquidations and dissolutions, asset sales, dividends and other payments in respect of the Company's capital stock, prepayments of certain debt, transactions with affiliates and certain modifications of organizational documents and certain debt agreements. In addition, the indentures governing the Company's 2026 Senior Unsecured Notes and the 2024 Convertible Notes contain restrictive covenants that limit the Company's and its subsidiaries' ability to, among other things, consolidate, merge or sell all or substantially all of their assets; create liens; and incur, assume or guarantee additional indebtedness.

Future Debt Payments

As of June 28, 2019, annual future debt payments were as follows:

	Future Debt Payments
	(in millions)
Fiscal year	
2020	$ 276
2021	311
2022	276
2023	6,431
2024	1,100
2025 and thereafter	2,300
Total debt maturities	10,694
Issuance costs and debt discounts	(172)
Net carrying value	$ 10,522

Note 7. Goodwill and Other Intangible Assets

The following table summarizes the activity related to the carrying amount of goodwill:

	Carrying Amount
	(in millions)
Balance at June 30, 2017	$ 10,014
Goodwill recorded in connection with acquisitions	61
Balance at June 29, 2018	10,075
Foreign currency translation adjustment	1
Balance at June 28, 2019	$ 10,076

The following tables present intangible assets as of June 28, 2019 and June 29, 2018:

	June 28, 2019			
	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	(in years)		*(in millions)*	
Finite:				
Existing technology	3	$ 4,332	$ (3,316)	$ 1,016
Trade names and trademarks	7	648	(310)	338
Customer relationships	6	635	(372)	263
Other	2	180	(180)	—
Leasehold interests	31	29	(7)	22
Total finite intangible assets		5,824	(4,185)	1,639
In-process research and development		72	—	72
Total intangible assets		$ 5,896	$ (4,185)	$ 1,711

	June 29, 2018			
	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	(in years)		*(in millions)*	
Finite:				
Existing technology	3	$ 4,323	$ (2,528)	$ 1,795
Trade names and trademarks	7	648	(222)	426
Customer relationships	6	635	(299)	336
Other	2	180	(161)	19
Leasehold interests	31	32	(8)	24
Total finite intangible assets		5,818	(3,218)	2,600
In-process research and development		80	—	80
Total intangible assets		$ 5,898	$ (3,218)	$ 2,680

As part of prior acquisitions, the Company recorded at the time of the acquisition acquired IPR&D for projects in progress that had not yet reached technological feasibility. IPR&D is initially accounted for as an indefinite-lived intangible asset. Once a project reaches technological feasibility, the Company reclassifies the balance to existing technology and begins to amortize the intangible asset over its estimated useful life. During 2019, the Company reclassified $8 million of acquired IPR&D to existing technology and commenced amortization over its estimated useful life of 2 years.

During 2019, 2018 and 2017, the Company did not record any impairment charges related to intangible assets.

Intangible assets are amortized over the estimated useful lives based on the pattern in which the economic benefits are expected to be received. Intangible asset amortization was as follows:

	2019	2018	2017
		(In millions)	
Intangible asset amortization	$ 968	$ 1,185	$ 1,169

The following table presents estimated future amortization expense for intangible assets currently subject to amortization as of June 28, 2019:

	Future Intangible Asset Amortization Expense
	(in millions)
Fiscal year	
2020	$ 758
2021	503
2022	226
2023	134
2024 and thereafter	18
Total future amortization expense	$ 1,639

Note 8. Pension and Other Post-Retirement Benefit Plans

The Company has pension and other post-retirement benefit plans in various countries. The Company's principal pension plans are in Japan. All pension and other post-retirement benefit plans outside of the Company's Japanese defined benefit pension plan (the "Japanese Plan") are immaterial to the Consolidated Financial Statements.

Obligations and Funded Status

The following table presents the unfunded status of the benefit obligations for the Japanese Plan:

	2019	2018	2017
		(in millions)	
Change in benefit obligation:			
Projected benefit obligation at beginning of period	$ 260	$ 249	$ 326
Service cost	6	6	8
Interest cost	2	2	1
Actuarial loss (gain)	13	9	(22)
Benefits paid	(9)	(9)	(30)
Settlement/Curtailment	—	—	(6)
Non-U.S. currency movement	8	3	(28)
Projected benefit obligation at end of period	280	260	249
Change in plan assets:			
Fair value of plan assets at beginning of period	200	189	212
Actual return on plan assets	2	8	15
Employer contributions	10	10	10
Benefits paid	(9)	(9)	(30)
Non-U.S. currency movement	5	2	(18)
Fair value of plan assets at end of period	208	200	189
Unfunded status	$ 72	$ 60	$ 60

The following table presents the unfunded amounts related to the Japanese Plan as recognized on the Company's Consolidated Balance Sheets:

	June 28, 2019	June 29, 2018
	(in millions)	
Current liabilities	$ 1	$ 1
Non-current liabilities	71	59
Net amount recognized	$ 72	$ 60

The accumulated benefit obligation for the Japanese defined benefit pension plans was $280 million at June 28, 2019. As of June 28, 2019, actuarial losses for the Japanese defined benefit pension plans of $35 million are included in Accumulated other comprehensive loss in the Consolidated Balance Sheet. There were no prior service credits for the defined benefit pension plans recognized in Accumulated other comprehensive loss in the Consolidated Balance Sheet as of June 28, 2019.

Net periodic benefit costs were not material for 2019, 2018, and 2017.

Assumptions

Weighted-Average Assumptions

The weighted-average actuarial assumptions used to determine the projected benefit obligations for the Japanese defined benefit pension plans were as follows:

	2019	2018	2017
Discount rate	0.4%	0.7%	0.8%
Rate of compensation increase	0.6%	0.7%	0.8%

The weighted-average actuarial assumptions used to determine benefit costs for the Japanese defined benefit pension plans were as follows:

	2019	2018	2017
Discount rate	0.7%	0.8%	0.4%
Expected long-term rate of return on plan assets	2.5%	2.5%	2.5%
Rate of compensation increase	0.7%	0.8%	0.8%

The Company develops a discount rate by calculating when the estimated benefit payments will be due. Management in Japan then matches the benefit payments to bond ratings that are "AA" or higher which match the timing of the expected benefit payments to determine the appropriate discount rate.

The Company develops the expected long-term rate of return on plan assets by analyzing rates of return in Japan as well as the investment portfolio applicable to the plan. The Company's estimates of future rates of return on assets is based in large part on the projected rate of return from the respective investment managers using a long-term view of historical returns, as well as actuarial recommendations using the most current generational and mortality tables and rates.

The Company develops the rate of compensation increase assumptions using local compensation practices and historical rates of increases.

Plan Assets

Investment Policies and Strategies

The investment policy in Japan is to generate a stable return on investments over a long-term horizon in order to have adequate pension funds to meet the Company's future obligations. In order to achieve this investment goal, a diversified portfolio with target asset allocation and expected rate of return is established by considering factors such as composition of participants, level of funded status, capacity to absorb risks and the current economic environment. The target asset allocation is 62% in debt securities, 35% in equity securities, and the remaining 3% in other assets. Risk management is accomplished through diversification, periodic review of plan asset performance and appropriate realignment of asset allocation. Assumptions regarding the expected long-term rate of return on plan assets are periodically reviewed and are based on the historical trend of returns, the risk and correlation of each asset and the latest economic environment.

The expected long-term rate of return is estimated based on many factors, including expected forecast for inflation, risk premiums for each asset class, expected asset allocation, current and future financial market conditions and diversification and rebalancing strategies. Historical return patterns and correlations, consensus return forecasts and other relevant financial factors are analyzed periodically by the investment advisor so as to ensure that the expected long-term rate of return is reasonable and appropriate.

Fair Value Measurements

The following tables present the Japanese defined benefit pension plans' major asset categories and their associated fair values as of June 28, 2019 and June 29, 2018:

	June 28, 2019			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Equity:				
Equity commingled/mutual funds[1][2]	$ —	$ 68	$ —	$ 68
Fixed income:				
Fixed income commingled/mutual funds[1][3]	—	131	—	131
Cash equivalents and short-term investments	9	—	—	9
Fair value of plan assets	$ 9	$ 199	$ —	$ 208

	June 29, 2018			
	Level 1	Level 2	Level 3	Total
	(in millions)			
Equity:				
Equity commingled/mutual funds[1][2]	$ —	$ 68	$ —	$ 68
Fixed income:				
Fixed income commingled/mutual funds[1][3]	—	125	—	125
Cash equivalents and short-term investments	3	4	—	7
Fair value of plan assets	$ 3	$ 197	$ —	$ 200

(1) Commingled funds represent pooled institutional investments.
(2) Equity mutual funds invest primarily in equity securities.
(3) Fixed income mutual funds invest primarily in fixed income securities.

There were no significant movements of assets between any level categories in 2019, 2018 or 2017.

Fair Value Valuation Techniques

Equity securities are valued at the closing price reported on the stock exchange on which the individual securities are traded. Equity commingled/mutual funds are typically valued using the net asset value ("NAV") provided by the investment manager or administrator of the fund. The NAV is based on the value of the underlying assets owned by the fund, minus liabilities and divided by the number of shares or units outstanding. These assets are classified as either Level 1 or Level 2, depending on availability of quoted market prices for identical or similar assets.

If available, fixed income securities are valued using the close price reported on the major market on which the individual securities are traded and are classified as Level 1. The fair value of other fixed income securities is typically estimated using pricing models and quoted prices of securities with similar characteristics, and is generally classified as Level 2.

Cash equivalents includes money market accounts that are valued at their cost plus interest on a daily basis, which approximates fair value. Short-term investments represent securities with original maturities of one year or less. These assets are classified as either Level 1 or Level 2.

Cash Flows

The Company's expected employer contributions for 2020 and annual benefit payments over the next 5 years for its Japanese defined benefit pension plans are not expected to be material.

Note 9. Commitments, Contingencies and Related Parties

Flash Ventures

The Company procures substantially all of its flash-based memory wafers from its business ventures with Toshiba Memory Corporation ("TMC"), which consists of three separate legal entities: Flash Partners Ltd. ("Flash Partners"), Flash Alliance Ltd. ("Flash Alliance"), and Flash Forward Ltd. ("Flash Forward"), collectively referred to as "Flash Ventures". The Company has a 49.9% ownership interest and TMC has a 50.1% ownership interest in each of these entities. Through Flash Ventures, the Company and TMC collaborate in the development and manufacture of flash-based memory wafers, which are manufactured by TMC at its wafer fabrication facilities located in Japan using semiconductor manufacturing equipment individually owned or leased by each Flash Ventures entity. Each Flash Ventures entity purchases wafers from TMC at cost and then resells those wafers to the Company and TMC at cost plus a markup.

Flash Partners. Flash Partners was formed in 2004 in connection with the construction of TMC's "Y3" 300-millimeter wafer fabrication facility located in Yokkaichi, Japan.

Flash Alliance. Flash Alliance was formed in 2006 in connection with the construction of TMC's "Y4" 300-millimeter wafer fabrication facility located in Yokkaichi, Japan.

Flash Forward. Flash Forward was formed in 2010 in connection with the construction of TMC's "Y5" 300-millimeter wafer fabrication facility located in Yokkaichi, Japan. Y5 was built in two phases of approximately equal size.

New Y2. The Company has a facility agreement with TMC related to the construction and operation of TMC's "New Y2" 300-millimeter wafer fabrication facility located in Yokkaichi, Japan. New Y2 primarily provided additional clean room space to convert a portion of 2-dimensional ("2D") flash-based wafer production capacity to 3-dimensional ("3D") flash-based wafer production capacity. Production of flash-based wafers in New Y2 started in 2016.

Y6. The Company also has a facility agreement with TMC related to the construction and operation of TMC's "Y6" 300-millimeter wafer fabrication facility in Yokkaichi, Japan. Y6 is primarily intended to provide clean room space to continue the transition of existing 2D flash-based wafer capacity to 3D flash-based wafer production capacity. Production of flash-based wafers in Y6 started for Flash Ventures started in 2018.

K1. In May 2019, the Company entered into additional agreements to extend Flash Ventures to a new wafer fabrication facility, referred to as "K1." K1 is currently under construction at a site in Kitakami, Iwate, Japan. The Company is committed to pay, among other items, future building depreciation prepayments of $358 million as follows: $156 million in fiscal year 2020, $124 million in fiscal year 2021 and $78 million in fiscal 2022, to be credited against future wafer charges. The primary purpose of K1 is to provide clean room space to continue the transition of existing flash-based wafer capacity to newer flash technology nodes. Output from the initial production line at K1 is expected in the second half of fiscal year 2020. Meaningful output from K1 is not expected to begin until the first half of fiscal year 2021.

The Company accounts for its ownership position of each entity within Flash Ventures under the equity method of accounting. The financial and other support provided by the Company in all periods presented was either contractually required or the result of a joint decision to expand wafer capacity, transition to new technologies or refinance existing equipment lease commitments. Entities within Flash Ventures are VIEs. The Company evaluated whether it is the primary beneficiary of any of the entities within Flash Ventures for all periods presented and determined that it is not the primary beneficiary of any of the entities within Flash Ventures because it does not have a controlling financial interest in any of those entities. In determining whether the Company is the primary beneficiary, the Company analyzed the primary purpose and design of Flash Ventures, the activities that most significantly impact Flash Ventures' economic performance, and whether the Company had the power to direct those activities. The Company concluded, based upon its 49.9% ownership, the voting structure and the manner in which the day-to-day operations are conducted for each entity within Flash Ventures, that the Company lacked the power to direct most of the activities that most significantly impact the economic performance of each entity within Flash Ventures.

The following table presents the notes receivable from, and equity investments in, Flash Ventures as of June 28, 2019 and June 29, 2018:

	June 28, 2019	June 29, 2018
	(in millions)	
Notes receivable, Flash Partners	$ 551	$ 767
Notes receivable, Flash Alliance	878	48
Notes receivable, Flash Forward	743	700
Investment in Flash Partners	200	191
Investment in Flash Alliance	296	283
Investment in Flash Forward	123	116
Total notes receivable and investments in Flash Ventures	$ 2,791	$ 2,105

During 2019 and 2018, the Company made net payments to Flash Ventures of $4.13 billion and $3.79 billion, respectively, for purchased flash-based memory wafers and net loans and investments.

The Company makes, or will make, loans to Flash Ventures to fund equipment investments for new process technologies and additional wafer capacity. The Company aggregates its Flash Ventures' notes receivable into one class of financing receivables due to the similar ownership interest and common structure in each Flash Venture entity. For all reporting periods presented, no loans were past due and no loan impairments were recorded. The Company's notes receivable from each Flash Ventures entity, denominated in Japanese yen, are secured by equipment owned by that Flash Ventures entity.

As of June 28, 2019 and June 29, 2018, the Company had accounts payable balances due to Flash Ventures of $331 million and $259 million, respectively.

The Company's maximum reasonably estimable loss exposure (excluding lost profits) as a result of its involvement with Flash Ventures, based upon the Japanese yen to U.S. dollar exchange rate at June 28, 2019, is presented below. Investments in Flash Ventures are denominated in Japanese yen, and the maximum estimable loss exposure excludes any cumulative translation adjustment due to revaluation from the Japanese yen to the U.S. dollar.

	June 28, 2019
Notes receivable	$ 2,172
Equity investments	619
Operating lease guarantees	1,575
Inventory	197
Maximum estimable loss exposure	$ 4,563

As of June 28, 2019 and June 29, 2018, the Company's retained earnings included undistributed earnings of Flash Ventures of $14 million and $8 million, respectively.

The Company is obligated to pay for variable costs incurred in producing its share of Flash Ventures' flash-based memory wafer supply, based on its three month forecast, which generally equals 50% of Flash Ventures' output. In addition, the Company is obligated to pay for half of Flash Ventures' fixed costs regardless of the output the Company chooses to purchase. The Company is not able to estimate its total wafer purchase commitment obligation beyond its rolling three-month purchase commitment because the price is determined by reference to the future cost of producing the semiconductor wafers. In addition, the Company is committed to fund 49.9% to 50.0% of each Flash Ventures entity's capital investments to the extent that each Flash Ventures entity's operating cash flow is insufficient to fund these investments.

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Flash Ventures has historically operated near 100% of its manufacturing capacity. As a result of flash business conditions, the Company temporarily reduced its utilization of its share of Flash Ventures' manufacturing capacity to an abnormally low level to more closely align the Company's flash-based wafer supply with the projected demand. In 2019, the Company incurred costs of $264 million associated with the reduction in utilization, which was recorded as a charge to cost of revenue.

In June 2019, an unexpected power outage incident occurred at the flash-based memory manufacturing facilities operated by Flash Ventures in Yokkaichi, Japan. The power outage incident impacted the facilities and process tools and resulted in the damage of flash wafers in production. As a result of the incident, the Company incurred charges of $145 million recorded in cost of revenue for the year ended June 28, 2019, which primarily consisted of the write-off of damaged inventory and unabsorbed manufacturing overhead costs. The Company is pursuing recovery of its losses associated with this event; however, the amount of any recovery cannot be estimated at this time.

Inventory Purchase Commitments with Flash Ventures. Purchase orders placed under Flash Ventures for up to three months are binding and cannot be canceled.

Research and Development Activities. The Company participates in common R&D activities with TMC and is contractually committed to a minimum funding level. R&D commitments are immaterial to the Consolidated Financial Statements.

Off-Balance Sheet Liabilities

Flash Ventures sells to and leases back from a consortium of financial institutions a portion of its tools and has entered into equipment lease agreements of which the Company guarantees half or all of the outstanding obligations under each lease agreement. The lease agreements are subject to customary covenants and cancellation events related to Flash Ventures and each of the guarantors. The occurrence of a cancellation event could result in an acceleration of Flash Ventures' obligations and a call on the Company's guarantees.

The following table presents the Company's portion of the remaining guarantee obligations under the Flash Ventures' lease facilities in both Japanese yen and U.S. dollar-equivalent, based upon the Japanese yen to U.S. dollar exchange rate as of June 28, 2019.

	Lease Amounts	
	(Japanese yen, in billions)	*(U.S. dollar, in millions)*
Total guarantee obligations	¥ 170	$ 1,575

The following table details the breakdown of the Company's remaining guarantee obligations between the principal amortization and the purchase option exercise price at the end of the term of the Flash Ventures lease agreements, in annual installments as of June 28, 2019 in U.S. dollars, based upon the Japanese yen to U.S. dollar exchange rate as of June 28, 2019:

Annual Installments	Payment of Principal Amortization	Purchase Option Exercise Price at Final Lease Terms	Guarantee Amount
		(in millions)	
2020	$ 419	$ 66	$ 485
2021	321	109	430
2022	235	50	285
2023	137	67	204
2024	51	120	171
Thereafter	—	—	—
Total guarantee obligations	$ 1,163	$ 412	$ 1,575

The Company and TMC have agreed to mutually contribute to, and indemnify each other and Flash Ventures for, environmental remediation costs or liability resulting from Flash Ventures' manufacturing operations in certain circumstances. The Company has not made any indemnification payments, nor recorded any indemnification receivables, under any such agreements. As of June 28, 2019, no amounts have been accrued in the Consolidated Financial Statements with respect to these indemnification agreements.

Unis Venture

The Company has a joint venture with Unisplendour Corporation Limited and Unissoft (Wuxi) Group Co. Ltd. ("Unis"), referred to as the "Unis Venture", to market and sell the Company's products in China and to develop data storage systems for the Chinese market in the future. The Unis Venture is 49% owned by the Company and 51% owned by Unis. The Company accounts for its investment in the Unis Venture under the equity method of accounting. Revenue on products distributed by the Unis Venture is recognized upon sell through to third-party customers. For the years ended June 28, 2019 and June 29, 2018, the Company recognized less than 1% of its consolidated revenue on products distributed by the Unis Venture. The outstanding accounts receivable due from and investment in the Unis Venture were not material to the Consolidated Financial Statements as of June 28, 2019 or June 29, 2018.

Sale-Leaseback

In April 2019, the Company completed a sale and leaseback of its manufacturing facility in Fremont, California. The Company received proceeds from the sale of $115 million and recognized a loss of $25 million. The property is being leased back over a term of 15 years at an annual lease rate of $7 million for the first year and increasing by 3% per year thereafter. The lease includes four 5-year renewal options for the ability to extend up to 20 years.

Lease Commitments

The Company leases certain facilities and equipment under long-term, non-cancelable operating leases. The Company's operating leases consist of leased property and equipment that expire at various dates through 2034. Future minimum lease payments under operating leases that have initial non-cancelable lease terms in excess of one year at June 28, 2019 are as follows:

	Lease Amounts
	(in millions)
Fiscal year	
2020	$ 59
2021	45
2022	33
2023	22
2024	16
Thereafter	116
Total future minimum lease payments	$ 291

Net rent expense was as follows:

	2019	2018	2017
		(In millions)	
Rent expense, net	$ 47	$ 49	$ 56

Purchase Agreements and Other Commitments

In the normal course of business, the Company enters into purchase orders with suppliers for the purchase of components used to manufacture its products. These purchase orders generally cover forecasted component supplies needed for production during the next quarter, are recorded as a liability upon receipt of the components, and generally may be changed or canceled at any time prior to shipment of the components. The Company also enters into long-term agreements with suppliers that contain fixed future commitments, which are contingent on certain conditions such as performance, quality and technology of the vendor's components. As of June 28, 2019, the Company had the following minimum long-term commitments:

	Long-term purchase commitments
	(in millions)
Fiscal year	
2020	$ 136
2021	244
2022	263
2023	154
2024	40
Thereafter	210
Total	$ 1,047

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Note 10. Business Segment, Revenue Information, Geographic Information and Concentration of Risk

The Company manufactures, markets, and sells data storage devices and solutions in the U.S. and in foreign countries through its sales personnel, dealers, distributors, retailers, and subsidiaries. Based upon the management structure under the current operating model, the Company determined that the Company's Chief Operating Decision Maker, its Chief Executive Officer, evaluates performance of the Company and makes decisions regarding allocation of resources based on total Company results. As a result, the Company concluded it operates in one segment, data storage devices and solutions.

The following table summarizes the Company's revenue by end market product category, between Client Devices (mobile, desktop, gaming and digital video hard drives, SSDs, embedded products and wafers); Data Center Devices and Solutions (capacity and performance enterprise HDDs, enterprise SSDs, data center software and system solutions); and Client Solutions (removable products, hard drive content solutions and flash content solutions):

	2019	2018	2017
		(in millions)	
Client Devices	$ 8,095	$ 10,108	$ 9,520
Data Center Devices & Solutions	5,038	6,075	5,505
Client Solutions	3,436	4,464	4,068
Total revenue	$ 16,569	$ 20,647	$ 19,093

The following table summarizes the Company's revenue by form factor category, between HDD and flash-based products:

	2019	2018	2017
		(in millions)	
HDD	$ 8,746	$ 10,698	$ 10,640
Flash-based	7,823	9,949	8,453
Total revenue	$ 16,569	$ 20,647	$ 19,093

The Company's operations outside the United States include manufacturing facilities in China, Japan, Malaysia, the Philippines and Thailand, as well as sales offices throughout the Americas, Asia Pacific, Europe and the Middle East. The following tables summarize the Company's operations by geographic area:

	2019	2018	2017
		(in millions)	
Net revenue[(1)]			
United States	$ 3,602	$ 4,640	$ 3,881
China	3,861	4,393	4,271
Hong Kong	3,122	4,022	3,257
Rest of Asia	2,116	2,752	3,181
Europe, Middle East and Africa	3,109	3,858	3,276
Other	759	982	1,227
Total	$ 16,569	$ 20,647	$ 19,093

(1) Net revenue is attributed to geographic regions based on the ship-to location of the customer. License and royalty revenue is attributed to countries based upon the location of the headquarters of the licensee.

(2) Prior year information is presented in accordance with the accounting guidance in effect during that period and has not been updated for Topic 606. The impact of the adoption of Topic 606 was not material

	June 28, 2019	June 29, 2018
	(in millions)	
Long-lived assets[(1)]		
United States	$ 962	$ 1,187
Malaysia	667	737
China	420	427
Thailand	405	349
Rest of Asia	335	336
Europe, Middle East and Africa	54	59
Total	$ 2,843	$ 3,095

(1) Long-lived assets include property, plant and equipment and are attributed to the geographic location in which they are located.

Customer Concentration and Credit Risk

The Company sells its products to computer manufacturers, resellers and retailers throughout the world. For each of 2019, 2018 and 2017, no customer accounted for 10% or more of the Company's net revenue. For 2019, 2018 and 2017, the Company's top 10 customers accounted for 45%, 42%, and 36%, respectively, of the Company's net revenue.

The Company performs ongoing credit evaluations of its customers' financial condition and generally requires no collateral. The Company maintains allowances for potential credit losses, and such losses have historically been within management's expectations. At any given point in time, the total amount outstanding from any one of a number of its customers may be individually significant to the Company's financial results. As of June 28, 2019, two customers, Dell Technologies Inc. and Huawei Investment & Holding Co., accounted for 14% and 10%, respectively, of the Company's net accounts receivable. As of June 29, 2018, two customers, Apple, Inc. and Dell Inc., accounted for 13% and 10%, respectively, of the Company's net accounts receivable. As of June 28, 2019 and June 29, 2018, the Company had net accounts receivable of $1.20 billion and $2.20 billion, respectively, and reserves for potential credit losses were not material as of each period end.

The Company also has cash equivalent and investment policies that limit the amount of credit exposure to any one financial institution or investment instrument and requires that investments be made only with financial institutions or in investment instruments evaluated as highly credit-worthy.

Supplier Concentration

All of the Company's flash memory system products require silicon wafers for the memory and controller components. The Company's flash memory wafers are currently supplied almost entirely from Flash Ventures and the controller wafers are all manufactured by third-party sources. The failure of any of these sources to deliver silicon wafers could have a material adverse effect on the Company's business, financial condition and results of operations.

In addition, some key components are purchased from single source vendors for which alternative sources are currently not available. Shortages could occur in these essential materials due to an interruption of supply or increased demand in the industry. If the Company was unable to procure certain of such materials, the Company's sales could decline, which could have a material adverse effect upon its results of operations. The Company also relies on third-party subcontractors to assemble and test a portion of its products. The Company does not have long-term contracts with some of these subcontractors and cannot directly control product delivery schedules or manufacturing processes. This could lead to product shortages or quality assurance problems that could increase the manufacturing costs of the Company's products and have material adverse effects on the Company's operating results.

Note 11. Western Digital Corporation 401(k) Plan

The Company maintains the Western Digital Corporation 401(k) Plan (the "Plan"). The Plan covers substantially all domestic employees, subject to certain eligibility requirements. Eligible employees receive employer matching contributions immediately upon hire unless the individual is covered by a collective bargaining agreement, provides services as a consultant, intern, independent contractor, leased or temporary employee, or otherwise is not treated as a common-law employee.

Eligible employees are generally able to contribute up to 30% of their eligible compensation on a pre-tax basis or 10% of their eligible compensation on an after-tax basis subject to Internal Revenue Service ("IRS") limitations. The Company makes a basic matching contribution equal to 50% of the each eligible participant's contribution that does not exceed 6% of the eligible participant's annual compensation in the year of contribution. The Company's employer matching contributions vest over a two-year graded period. The Company may suspend matching contributions at any time at its discretion. Contributions, including the Company's matching contribution to the Plan, are recorded as soon as administratively possible after the Company makes payroll deductions from Plan participants.

For 2019, 2018 and 2017, the Company made Plan contributions of $34 million, $35 million and $36 million, respectively.

Note 12. Shareholders' Equity

2017 Performance Incentive Plan

The types of awards that may be granted under the Western Digital Corporation Amended and Restated 2017 Performance Incentive Plan ("2017 Performance Incentive Plan") include stock options, stock appreciation rights ("SARs") , RSUs, PSUs, stock bonuses and other forms of awards granted or denominated in the Company's common stock or units of the Company's common stock, as well as cash bonus awards. Persons eligible to receive awards under the 2017 Performance Incentive Plan include officers and employees of the Company or any of its subsidiaries, directors of the Company and certain consultants and advisors to the Company or any of its subsidiaries. The vesting of awards under the 2017 Performance Incentive Plan is determined at the date of grant. Each award expires on a date determined at the date of grant; however, the maximum term of options and SARs under the 2017 Performance Incentive Plan is ten years after the grant date of the award. RSUs granted under the 2017 Performance Incentive Plan typically vest over periods ranging from one to four years from the date of grant. PSUs are granted to certain employees and vest only after the achievement of pre-determined performance metrics and completion of requisite service periods. Once the performance metrics are met, vesting of PSUs is generally subject to continued service by the employee. To the extent available, the Company issues shares out of treasury stock upon the vesting of awards, the exercise of employee stock options and the purchase of shares pursuant to the ESPP.

Outstanding RSU and PSU awards have dividend equivalent rights which entitle holders of such outstanding awards to the same dividend value per share as holders of common stock. Dividend equivalent rights are subject to the same vesting and other terms and conditions as the corresponding unvested RSUs and PSUs. Dividend equivalent rights are accumulated and paid in additional shares when the underlying shares vest.

As of June 28, 2019, the maximum number of shares of the Company's common stock that was authorized for award grants under the 2017 Performance Incentive Plan was 88.7 million shares. Shares issued in respect of stock options and SARs granted under the 2017 Performance Incentive Plan count against the plan's share limit on a one-for-one basis, whereas currently, shares issued in respect of any other type of award granted count against the plan's share limit as 1.72 shares for every one share issued in connection with such award. The 2017 Performance Incentive Plan was extended in 2013 and will terminate on August 4, 2025 unless terminated earlier by the Company's Board of Directors (the "Board").

Employee Stock Purchase Plan

Under the Company's ESPP, eligible employees may authorize payroll deductions of up to 10% of their eligible compensation, subject to IRS limitations, during prescribed offering periods to purchase shares of the Company's common stock at 95% of the fair market value of common stock either at the beginning of that offering period or on the applicable exercise date, whichever is less. A participant may participate in only one offering period at a time, and a new offering period generally begins each June 1st and December 1st. Each offering period is generally 24 months and consists of four exercise dates (each, generally six months following the start of the offering period or the preceding exercise date, as the case may be). If the fair market value of the Company's common stock is less on a given exercise date than on the date of grant, employee participation in that offering period ends and participants are automatically re-enrolled in the next new offering period.

During 2019, 2018 and 2017, the Company issued 2.6 million, 2.5 million, and 2.3 million shares, respectively, for aggregate purchase amounts of $102 million, $119 million and $105 million, respectively.

Stock-based Compensation Expense

The following tables present the Company's stock-based compensation for equity-settled awards by type and financial statement line as well as the related tax benefit included in the Company's Consolidated Statements of Operations:

	2019	2018	2017
		(in millions)	
Options	$ 16	$ 25	$ 41
Restricted and performance stock units	263	325	330
Employee stock purchase plan	27	27	23
Total	$ 306	$ 377	$ 394

	2019	2018	2017
		(in millions)	
Cost of revenue	$ 48	$ 49	$ 49
Research and development	155	170	173
Selling, general and administrative	103	157	161
Employee termination, asset impairment, and other charges	—	1	11
Subtotal	306	377	394
Tax benefit	(50)	(66)	(105)
Total	$ 256	$ 311	$ 289

Compensation cost related to unvested stock options, RSUs, PSUs, and rights to purchase shares of common stock under the Company's ESPP will generally be amortized on a straight-line basis over the remaining average service period. The following table presents the unamortized compensation cost and weighted average service period of all unvested outstanding awards as of June 28, 2019:

	Unamortized Compensation Costs	Weighted Average Service Period
	(in millions)	(years)
Options	$ 7	1.0
RSUs and PSUs (1)	485	2.4
ESPP	65	1.9
Total unamortized compensation cost	$ 557	

(1) Weighted average service period assumes the performance metrics are met for the PSUs.

WESTERN DIGITAL CORPORATION
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Plan Activities

Stock Options

The following table summarizes stock option activity under the Company's incentive plans:

	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life	Aggregate Intrinsic Value
	(in millions)		*(in years)*	*(in millions)*
Options outstanding at July 1, 2016	9.0	$ 55.74		
Granted	2.8	44.83		
Exercised	(3.5)	37.72		$ 120
Canceled or expired	(0.9)	71.31		
Options outstanding at June 30, 2017	7.4	58.14		
Exercised	(2.2)	44.52		$ 99
Canceled or expired	(0.4)	60.85		
Options outstanding at June 29, 2018	4.8	64.23		
Exercised	(0.4)	39.58		$ 8
Canceled or expired	(0.5)	74.79		
Options outstanding at June 28, 2019	3.9	$ 65.72	2.6	$ 8
Exercisable at June 28, 2019	3.3	$ 68.97	2.3	$ 6

RSUs and PSUs

The following table summarizes RSU and PSU activity under the Company's incentive plans:

	Number of Shares	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value at Vest Date
	(in millions)		*(in millions)*
RSUs and PSUs outstanding at July 1, 2016	15.7	$ 41.92	
Granted	6.0	44.13	
Vested	(5.9)	46.98	$ 399
Forfeited	(2.1)	43.89	
RSUs and PSUs outstanding at June 30, 2017	13.7	45.01	
Granted	6.3	74.68	
Vested	(6.3)	45.20	$ 552
Forfeited	(1.1)	50.35	
RSUs and PSUs outstanding at June 29, 2018	12.6	58.31	
Granted	7.3	54.82	
Vested	(6.3)	53.21	$ 360
Forfeited	(2.0)	58.63	
RSUs and PSUs outstanding at June 28, 2019	11.6	$ 62.07	

RSUs and PSUs are generally settled in an equal number of shares of the Company's common stock at the time of vesting of the units.

Fair Value Valuation Assumptions

Stock Option Grants — Binomial Model

The fair value of stock options granted is estimated using a binomial option-pricing model. The binomial model requires the input of assumptions. The Company uses historical data to estimate exercise, employee termination and expected stock price volatility within the binomial model. The risk-free rate for periods within the contractual life of the option is based on the U.S. Treasury yield curve in effect at the time of grant. No options were granted in 2019 or 2018. The fair value of stock options granted in 2017 was estimated using the following weighted average assumptions:

	2017
Suboptimal exercise factor	2.69
Range of risk-free interest rates	0.59% to 1.42%
Range of expected stock price volatility	0.35 to 0.49
Weighted-average expected volatility	0.40
Post-vesting termination rate	1.71%
Dividend yield	3.42%
Fair value	$13.72
Weighted-average expected term (in years)	3.6

RSU and PSU Grants

The fair value of the Company's RSU and PSU awards granted, excluding unvested RSU awards assumed through acquisitions, was based upon the closing price of the Company's stock price on the date of grant.

ESPP — Black-Scholes-Merton Model

The fair value of ESPP purchase rights issued is estimated at the date of grant of the purchase rights using the Black-Scholes-Merton option-pricing model. The Black-Scholes-Merton option-pricing model requires the input of assumptions such as the expected stock price volatility and the expected period until options are exercised. Purchase rights under the ESPP are generally granted on either June 1st or December 1st of each year.

The fair values of all outstanding ESPP purchase rights have been estimated at the date of grant using a Black-Scholes-Merton option-pricing model with the following weighted average assumptions:

	2019	2018	2017
Weighted-average expected term (in years)	1.26	1.24	1.26
Risk-free interest rate	2.39%	2.25%	0.81%
Stock price volatility	0.41	0.35	0.42
Dividend yield	4.92%	2.42%	4.02%
Fair value	$8.28	$16.89	$10.06

Stock Repurchase Program

The Company's Board of Directors previously authorized $5.00 billion for the repurchase of the Company's common stock. On July 25, 2018, the Company's Board of Directors authorized a new $5.00 billion share repurchase program that is effective through July 25, 2023, replacing all prior programs. For the three months ended June 28, 2019, the Company did not make any stock repurchases. For the year ended June 28, 2019, the Company repurchased 0.8 million shares for a total cost of $61 million under the previous authorization and 7.6 million shares for a total cost of $502 million under the new authorization. Therefore, the Company's stock repurchases under all stock repurchase authorizations in effect for the year ended June 28, 2019 totaled $563 million. The remaining amount available to be repurchased under the Company's current stock repurchase program as of June 28, 2019 was $4.50 billion. Repurchases under the stock repurchase program may be made in the open market or in privately negotiated transactions and may be made under a Rule 10b5-1 plan. The Company expects stock repurchases to be funded principally by operating cash flows.

Stock Reserved for Issuance

The following table summarizes all common stock reserved for issuance at June 28, 2019:

	Number of Shares
	(in millions)
Outstanding awards and shares available for award grants	33
ESPP	12
Total	45

Dividends to Shareholders

Since the first quarter of 2013, the Company has issued a quarterly cash dividend. During the twelve months ended June 28, 2019, the Company declared aggregate cash dividends of $2.00 per share on its outstanding common stock totaling $583 million, including $147 million that was paid on July 15, 2019.

On August 7, 2019, the Board declared a cash dividend of $0.50 per share to shareholders of record as of October 4, 2019, which will be paid on October 22, 2019. The Company may modify, suspend or cancel its cash dividend policy in any manner and at any time. The amount of future dividends under the Company's cash dividend policy, and the declaration and payment thereof, will be based upon all relevant factors, including the Company's financial position, results of operations, cash flows, capital requirements and restrictions under the Company's Credit Agreement and other financing agreements, and shall be in compliance with applicable law.

Note 13. Income Tax Expense

Income (loss) Before Taxes

The domestic and foreign components of Income (loss) before taxes were as follows:

	2019	2018	2017
		(in millions)	
Foreign	$ (642)	$ 2,398	$ 560
Domestic	355	(313)	209
Income (loss) before taxes	$ (287)	$ 2,085	$ 769

Income Tax Expense (Benefit)

The components of the income tax expense (benefit) were as follows:

	2019	2018	2017
		(in millions)	
Current:			
Foreign	$ 181	$ 166	$ 127
Domestic - Federal	(91)	1,597	229
Domestic - State	3	(5)	4
	93	1,758	360
Deferred:			
Foreign	226	(39)	56
Domestic - Federal	141	(300)	(44)
Domestic - State	7	(9)	—
	374	(348)	12
Income tax expense	$ 467	$ 1,410	$ 372

The 2017 Act includes a broad range of tax reform proposals affecting businesses, including a reduction in the U.S. federal corporate tax rate from 35% to 21% effective January 1, 2018, a one-time mandatory deemed repatriation tax on earnings of certain foreign subsidiaries that were previously tax deferred and the creation of new taxes on certain foreign earnings.

When initially accounting for the tax effects of the enactment of the 2017 Act, the Company applied the applicable SEC guidance and made a reasonable estimate of the effects on the Company's existing deferred tax balances and the one-time mandatory deemed repatriation tax required by the 2017 Act. As the Company finalized the accounting for the tax effects of the enactment of the 2017 Act during the one-year measurement period permitted by applicable SEC guidance, the Company reflected adjustments to the recorded provisional amounts. During the second quarter of fiscal 2019, the Company completed its accounting for the tax effects of the enactment of the 2017 Act. Although the U.S. Treasury and the IRS have issued tax guidance on certain provisions of the 2017 Act since the enactment date, the Company anticipates the issuance of additional regulatory and interpretive guidance. The Company applied a reasonable interpretation of the law along with any available guidance in finalizing its accounting for the tax effects of the 2017 Act. However, any additional regulatory or interpretive guidance would constitute new information which may require further refinements to its estimates in future periods.

Additional information regarding the significant provisions of the 2017 Act that impacted the Company is provided below.

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Re-measurement of deferred taxes

The Company recorded a provisional income tax benefit of $65 million for the year ended June 29, 2018, which related to the re-measurements of the Company's deferred tax balances and was based primarily on the rates at which the deferred tax assets and liabilities are expected to reverse in the current and future fiscal years, which were generally 29% and 22%, respectively. As of December 28, 2018, the Company had finalized the accounting for the tax effects related to the re-measurements of the Company's deferred tax balances with no material change. During the third quarter of fiscal 2019, the Company finalized the filing of its U.S. federal income tax return for the year ended June 29, 2018, which resulted in an additional income tax benefit of $5 million for the re-measurement of the Company's deferred tax assets and liabilities that are expected to reverse at 22%.

Mandatory deemed repatriation tax

In connection with the transition from a global to a territorial U.S. tax system, companies are required to pay a mandatory deemed repatriation tax. For the year ended June 29, 2018, the Company recorded a provisional amount for the mandatory deemed repatriation tax liability of $1.57 billion for foreign subsidiaries. The calculation of the mandatory deemed repatriation tax liability is based upon post-1986 earnings and profits. In addition, the mandatory deemed repatriation tax is based on the amount of foreign earnings held in cash and other specified assets, which are taxed at 15.5% and 8%, respectively, and is payable over an 8-year period.

The Company had finalized the accounting for the tax effects of the mandatory deemed repatriation tax during the one-year measurement period permitted by applicable SEC guidance. During the first half of fiscal 2019, the Company reduced its mandatory deemed repatriation tax liability by $302 million, of which $250 million was for the utilization of recorded deferred tax assets related to existing tax attributes. The utilization of the deferred tax assets was a reclassification that did not have an impact on the Company's income tax provision for the year ended June 28, 2019. The remaining $52 million reduction to the mandatory deemed repatriation tax primarily related to the Company's decision to no longer carry forward its 2018 operating loss and, instead, apply it against the mandatory deemed repatriation tax. The $52 million benefit resulted from utilizing the fiscal year 2018 operating losses at a 28% tax rate on the Company's 2018 tax return as compared to the carryforward tax rate of 21%. The Company also finalized its post-1986 earnings and profits calculation along with the amount of earnings held in cash and other specified assets and increased its mandatory deemed repatriation tax liability by $95 million.

Subsequent to the one-year measurement period, the Company finalized the filing of its U.S. federal income tax return for the year ended June 29, 2018, which resulted in a decrease to its mandatory repatriation tax liability by $105 million, of which $41 million related to the utilization of recorded deferred tax assets related to existing tax attributes. The utilization of the deferred tax assets resulted in an income tax benefit of $19 million for the third quarter of fiscal 2019 with the remaining amount being a reclassification that did not have an impact on the Company's income tax provision. The remaining $64 million benefit is attributable primarily to the issuance by the IRS of final regulations on January 15, 2019 with respect to the mandatory deemed repatriation tax liability. These regulations favorably impacted certain positions previously taken with respect to amounts recorded in the Company's Consolidated Financial Statements. The Company's estimate of the mandatory deemed repatriation tax liability after these refinements was $1.25 billion, excluding a $146 million liability for unrecognized tax benefits.

During the one-year measurement period, the Company evaluated the expected manner of recovery to determine whether or not to continue to assert indefinite reinvestment on a part or all the foreign undistributed earnings. This required the Company to re-evaluate its existing short and long-term capital allocation policies in light of the 2017 Act and calculate the tax cost that is incremental to the deemed repatriation tax of repatriating cash to the U.S. The provisional tax expense recorded by the Company as of June 28, 2018 was based upon an assumption at the time that all of its foreign undistributed earnings would be indefinitely reinvested.

During the second quarter of fiscal 2019, the Company finalized the accounting for the tax effects of the mandatory deemed repatriation tax on its indefinite reinvestment assertion. At that time, the Company removed its indefinite reinvestment assertion with the intention to repatriate all of its foreign undistributed earnings. As a result, the Company recorded a foreign income tax expense of $253 million related to foreign withholding taxes partially offset by foreign tax credits of $55 million. In addition, a state income tax expense of $30 million was recorded, partially offset by a decrease to the Company's valuation allowance of $21 million. The Company's decision to change its indefinite reinvestment assertion was based on interpretative guidance issued by the IRS at the time related to the ordering and taxation of a repatriation of the Company's foreign undistributed earnings. During the fourth quarter of fiscal 2019, the IRS issued additional interpretative guidance affecting the taxation of a certain portion of the Company's foreign undistributed earnings, which could result in additional federal tax. After consideration of this additional interpretative guidance, the Company made the determination that it no longer intends to repatriate this portion of its foreign undistributed earnings and did not establish an accrual for the potential related federal tax liability of $1.25 billion.

Deferred taxes on foreign earnings

As a result of the shift to a territorial system for U.S. taxation, the new minimum tax on certain foreign earnings ("global intangible low-tax income") provision of the 2017 Act imposes a tax on foreign earnings and profits in excess of a deemed return on tangible assets of foreign subsidiaries. This provision became effective for the Company with the fiscal year ended June 28, 2019. During the one-year measurement period permitted by applicable SEC guidance, the Company evaluated its accounting policy regarding whether to make an election to account for the effects of this provision either as a component of future income tax expense in the period in which the tax arises or as a component of deferred taxes on the related investments. Accordingly, no deferred tax assets and liabilities were established for timing differences between foreign U.S. GAAP income and U.S. taxable income that would be expected to reverse under the new minimum tax in future years for the year ended June 29, 2018.

Subsequent to June 29, 2018, the Company made the election to account for the effects of the global intangible low-tax income provision as a component of future income tax expense in the period in which the tax arises. There was no change in the Company's accounting as a result of this election.

Deferred Taxes

Temporary differences and carryforwards, which give rise to a significant portion of deferred tax assets and liabilities were as follows:

	June 28, 2019	June 29, 2018
	(in millions)	
Deferred tax assets:		
Sales related reserves and accrued expenses not currently deductible	$ 48	$ 53
Accrued compensation and benefits not currently deductible	124	145
Net operating loss carryforward	285	443
Business credit carryforward	410	448
Long-lived assets	144	161
Other	135	118
Total deferred tax assets	1,146	1,368
Deferred tax liabilities:		
Long-lived assets	(413)	(491)
Unremitted earnings of certain non-U.S. entities	(220)	(5)
Other	(32)	(43)
Total deferred tax liabilities	(665)	(539)
Valuation allowances	(619)	(614)
Deferred tax assets (liabilities), net	$ (138)	$ 215

The change from a net deferred tax asset to a net deferred tax liability is primarily due to a decrease in the deferred tax asset for the utilization of U.S. net operating losses and business credits of $250 million. These assets were utilized to reduce the mandatory repatriation tax liability. In addition, there was an increase in the deferred tax liability with respect to the decision to change the Company's indefinite reinvestment assertion on its foreign undistributed earnings of $228 million. These amounts are offset in part by the 2019 reversal of the deferred tax liability associated with purchase accounting intangibles of $78 million.

The net deferred tax asset valuation allowance increased by $5 million and $96 million in 2019 and 2018, respectively. The valuation allowance increase in 2019 is primarily attributable to the current year generation of state tax credits, net of current year utilization of $23 million, which the Company does not anticipate being able to utilize in future periods. This increase is partially offset by a valuation allowance decrease attributable to a change in the indefinite reinvestment assertion of $21 million for state tax credits, which the Company now anticipates being able to utilize in future periods. The valuation allowance increase in 2018 is primarily attributable to the 2018 generation of foreign net operating loss carryforwards of $54 million and state tax credits of $33 million, which the Company does not anticipate being able to utilize in future periods. The assessment of valuation allowances against deferred tax assets requires estimations and significant judgment. The Company continues to assess and adjust its valuation allowance based on operating results and market conditions. After weighing both the positive and negative evidence available, including, but not limited to, earnings history, projected future outcomes, industry and market trends and the nature of each of the deferred tax assets, the Company determined that it is able to realize most of its deferred tax assets with the exception of certain loss and credit carryforwards.

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Effective Tax Rate

Under the 2017 Act, the reduction of the U.S. federal corporate tax rate from 35% to 21% is effective January 1, 2018, requiring companies to use a blended rate for their fiscal 2018 tax year by applying a pro-rated percentage of the number of days before and after the January 1, 2018 effective date. This results in the use of an estimated annual effective tax rate of approximately 21% for the Company's U.S. federal corporate tax rate for fiscal year 2018. For fiscal year 2019 and beyond, the Company will utilize the enacted U.S. federal corporate tax rate of 21%.

Reconciliation of the U.S. Federal statutory rate to the Company's effective tax rate is as follows:

	2019	2018	2017
U.S. Federal statutory rate	21 %	28 %	35 %
Tax rate differential on international income	(75)	(34)	(27)
Tax effect of U.S. foreign income inclusion	(7)	1	4
Tax effect of U.S. foreign minimum tax	(38)	—	—
Tax effect of U.S. foreign derived intangible income	11	—	—
Tax effect of U.S. non-deductible stock-based compensation	(1)	1	1
Tax effect of U.S. permanent differences	(3)	(1)	(1)
State income tax, net of federal tax	—	—	1
Impact of 2017 Act:			
One-time mandatory deemed repatriation tax	(41)	75	—
Re-measurement of deferred taxes	2	(3)	—
Change in valuation allowance	(2)	5	29
Unremitted earnings of certain non-U.S. entities	(79)	—	5
Tax related to SanDisk integration	—	—	12
Foreign income tax credits	23	—	—
Federal R&D credits	24	(4)	(12)
Other	2	—	1
Effective tax rate	(163)%	68 %	48 %

Tax Holidays and Carryforwards

A substantial portion of the Company's manufacturing operations in Malaysia, the Philippines and Thailand operate under various tax holidays and tax incentive programs which expired or will expire in whole or in part at various dates during fiscal years 2020 through 2030. Certain of the holidays may be extended if specific conditions are met. The net impact of these tax holidays and tax incentives was an increase to the Company's net earnings by $393 million, or $1.33 per diluted share, $519 million, or $1.69 per diluted share, and $467 million, or $1.58 per diluted share, in 2019, 2018, and 2017, respectively.

As of June 28, 2019, the Company had varying amounts of federal and state NOL/tax credit carryforwards that do not expire or, if not used, expire in various years. Following is a summary of the Company's federal and state NOL/tax credit carryforwards and the related expiration dates of these NOL/tax credit carryforwards:

Jurisdiction	NOL/Tax Credit Carryforward Amount	Expiration
	(in millions)	
Federal NOL (Pre 2017 Act Generation)	$ 700	2021 to 2037
Federal NOL (Post 2017 Act Generation)	—	No expiration
State NOL	619	2021 to 2038
Federal tax credits	59	2020 to 2034
State tax credits	578	No expiration

The federal and state NOLs and credits relating to various acquisitions are subject to limitations under Sections 382 and 383 of the Internal Revenue Code. The Company expects the total amount of federal and state NOLs ultimately realized will be reduced as a result of these provisions by $128 million and $361 million, respectively. The Company expects the total amount of federal and state credits ultimately realized will be reduced as a result of these provisions by $28 million and $2 million, respectively.

As of June 28, 2019, the Company had varying amounts of foreign NOL carryforwards that do not expire or, if not used, expire in various years, depending on the country. The major jurisdictions that the Company receives foreign NOL carryforwards and the related amounts and expiration dates of these NOL carryforwards are as follows:

Jurisdiction	NOL Carryforward Amount	Expiration
	(in millions)	
Japan	$ 132	2024 to 2026
Belgium	105	No expiration
China	133	2023 to 2024
Spain	52	No expiration

Uncertain Tax Positions

With the exception of certain unrecognized tax benefits that are directly associated with the tax position taken, unrecognized tax benefits are presented gross in the Consolidated Balance Sheets. Interest and penalties related to unrecognized tax benefits are recognized in liabilities recorded for uncertain tax positions and are recorded in the provision for income taxes. Accrued interest and penalties included in the Company's liability related to unrecognized tax benefits as of June 28, 2019, June 29, 2018 and June 30, 2017 was $123 million, $110 million and $89 million, respectively.

The following is a tabular reconciliation of the total amounts of unrecognized tax benefits excluding accrued interest and penalties:

	2019	2018	2017
		(in millions)	
Unrecognized tax benefit, beginning balance	$ 551	$ 522	$ 491
Gross increases related to current year tax positions	172	38	35
Gross increases related to prior year tax positions	8	30	3
Gross decreases related to prior year tax positions	(24)	(9)	(8)
Settlements	(1)	(19)	(8)
Lapse of statute of limitations	(11)	(11)	(19)
Acquisitions	—	—	28
Unrecognized tax benefit, ending balance	$ 695	$ 551	$ 522

Included within long-term liabilities in the Consolidated Balance Sheets are the Company’s payable related to unrecognized tax benefits including accrued interest and penalties of $699 million, $508 million, and $493 million as of June 28, 2019, June 29, 2018 and June 30, 2017, respectively. The entire balance of the gross unrecognized tax benefits as of June 28, 2019, June 29, 2018 and June 30, 2017, if recognized, would affect the effective tax rate.

The Company files U.S. Federal, U.S. state and foreign tax returns. For both federal and state tax returns, with few exceptions, the Company is subject to examination for fiscal years 2013 through 2018. The Company is no longer subject to examination by the IRS for periods prior to 2012, although carry forwards generated prior to those periods may still be adjusted upon examination by the IRS or state taxing authority if they either have been or will be used in a subsequent period. In the major foreign jurisdictions, the Company could be subject to examination in China for calendar years 2009 through 2018, in Ireland for calendar years 2014 through 2018, in India for fiscal years 2014 through 2018, in Israel for fiscal years 2014 through 2018 and in Japan for fiscal years 2012 through 2018.

The IRS previously completed its field examination of the Company’s federal income tax returns for fiscal years 2008 through 2012 and proposed certain adjustments. As previously disclosed, the Company received Revenue Agent Reports from the IRS for fiscal years 2008 through 2009, proposing adjustments relating to transfer pricing with the Company’s foreign subsidiaries and intercompany payable balances. The Company disagrees with the proposed adjustments and in September 2015, filed a protest with the IRS Appeals Office and received the IRS rebuttal in July 2016. The Company and the IRS Appeals Office did not reach a settlement on the disputed matters. On June 28, 2018, the IRS issued a statutory notice of deficiency with respect to the disputed matters for fiscal years 2008 through 2009, seeking to increase the Company’s U.S. taxable income by an amount that would result in additional federal tax through fiscal year 2009 totaling approximately $516 million, subject to interest. The Company filed a petition with the U.S. Tax Court in September 2018. On December 10, 2018, the IRS issued a statutory notice of deficiency with respect to fiscal years 2010 through 2012, seeking to increase the Company’s U.S. taxable income by an amount that would result in additional federal tax for fiscal years 2010 through 2012 totaling approximately $549 million, subject to interest. Approximately $535 million of the total additional federal tax for fiscal years 2010 through 2012 relates to proposed adjustments for transfer pricing with the Company’s foreign subsidiaries, intercompany payable balances and the utilization of certain tax attributes. The Company filed a petition with the U.S. Tax Court in March 2019. The Company believes that its tax positions are properly supported and will vigorously contest the position taken by the IRS.

The Company believes that adequate provision has been made for any adjustments that may result from tax examinations. However, the outcome of tax examinations cannot be predicted with certainty. If any issues addressed in the Company’s tax examinations are resolved in a manner not consistent with management’s expectations, the Company could be required to adjust its provision for income taxes in the period such resolution occurs. As of June 28, 2019, it was not possible to estimate the amount of change, if any, in the unrecognized tax benefits that is reasonably possible within the next twelve months. Any significant change in the amount of the Company’s liability for unrecognized tax benefits would most likely result from additional information or settlements relating to the examination of the Company’s tax returns.

Note 14. Net Income (Loss) Per Common Share

The following table presents the computation of basic and diluted income (loss) per common share:

	2019	2018	2017
	(in millions, except per share data)		
Net income (loss)	$ (754)	$ 675	$ 397
Weighted average shares outstanding:			
Basic	292	297	288
Employee stock options, RSUs, PSUs and ESPP	—	10	8
Diluted	292	307	296
Income (loss) per common share			
Basic	$ (2.58)	$ 2.27	$ 1.38
Diluted	$ (2.58)	$ 2.20	$ 1.34

The Company computes basic income (loss) per common share using net income (loss) and the weighted average number of common shares outstanding during the period. Diluted income per common share is computed using net income and the weighted average number of common shares and potentially dilutive common shares outstanding during the period. Potentially dilutive common shares include dilutive outstanding employee stock options, RSUs and PSUs, and rights to purchase shares of common stock under the Company’s ESPP. For 2018 and 2017, the Company excluded 2 million and 3 million common shares, respectively, subject to outstanding equity awards from the calculation of diluted shares because their impact would have been anti-dilutive based on the Company’s average stock price during the period. For 2019, the Company reported a net loss, and all outstanding equity awards have been excluded from such periods because including them would be anti-dilutive.

Note 15. Employee Termination, Asset Impairment and Other Charges

The Company recorded the following charges related to employee terminations benefits, asset impairment, and other charges:

	2019	2018	2017
		(in millions)	
Employee termination and other charges:			
Closure of Foreign Manufacturing Facilities	$ 22	$ 56	$ 10
Business Realignment	144	50	72
Restructuring Plan 2016	—	92	128
Total employee termination and other charges	166	198	210
Asset impairment:			
Restructuring Plan 2016	—	16	—
Closure of Foreign Manufacturing Facility	—	—	11
Total asset impairment	—	16	11
Stock-based compensation accelerations and adjustments:			
Business Realignment	—	1	11
Total stock-based compensation accelerations and adjustments	—	1	11
Total employee termination, asset impairment, and other charges	$ 166	$ 215	$ 232

Closure of Foreign Manufacturing Facilities

In July 2018, the Company announced the closing of its HDD manufacturing facility in Kuala Lumpur, Malaysia, in order to reduce its manufacturing costs and consolidate HDD operations into Thailand. The Company substantially completed the closure as of June 28, 2019. The Company incurred charges of $10 million in employee termination benefits and $12 million in contract termination and other charges in the year ended June 28, 2019 and $56 million of employee termination benefits in the year ended June 29, 2018.

The following table presents an analysis of the components of the restructuring charges, payments and adjustments made against the reserve during the year ended June 28, 2019:

	Employee Termination Benefits	Contract Termination and Other	Total
		(in millions)	
Accrual balance at June 29, 2018	$ 56	$ —	$ 56
Charges	10	12	22
Cash payments	(36)	(10)	(46)
Accrual balance at June 28, 2019	$ 30	$ 2	$ 32

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Business Realignment

The Company periodically incurs charges as part of the integration process of recent acquisitions and to realign its operations with anticipated market demand, primarily consisting organization rationalization designed to streamline our business, reduce our cost structure and focus our resources.

The following table presents an analysis of the components of the activity against the reserve during the year ended June 28, 2019:

	Employee Termination Benefits	Contract Termination and Other	Total
		(in millions)	
Accrual balance at June 29, 2018	$ 31	$ 5	$ 36
Charges	131	13	144
Cash payments	(125)	(10)	(135)
Accrual balance at June 28, 2019	$ 37	$ 8	$ 45

Restructuring Plan 2016

In 2016, the Company initiated a set of actions relating to the restructuring plan associated with the integration of substantial portions of its HGST and WD subsidiaries (“Restructuring Plan 2016”). Restructuring Plan 2016 consisted of asset and footprint reductions, product road map consolidation and organization rationalization. These actions were substantially completed in fiscal year 2018.

Note 16. Legal Proceedings

Unless otherwise stated below, for each of the matters described below, the Company has either recorded an accrual for losses that are probable and reasonably estimable or has determined that, while a loss is reasonably possible (including potential losses in excess of the amounts accrued by the Company), a reasonable estimate of the amount of loss or range of possible losses with respect to the claim or in excess of amounts already accrued by the Company cannot be made. The ability to predict the ultimate outcome of such matters involves judgments, estimates and inherent uncertainties. The actual outcome of such matters could differ materially from management's estimates.

Solely for purposes of this note, "WD" refers to Western Digital Corporation or one or more of its subsidiaries excluding HGST prior to the closing of the Company's acquisition of HGST on March 8, 2012 (the "HGST Closing Date") and SanDisk prior to the Company's acquisition of SanDisk on May 12, 2016 (the "SanDisk Closing Date"); "HGST" refers to Hitachi Global Storage Technologies Holdings Pte. Ltd. or one or more of its subsidiaries as of the HGST Closing Date; "SanDisk" refers to SanDisk Corporation or one or more of its subsidiaries as of the SanDisk Closing Date; and "the Company" refers to Western Digital Corporation and all of its subsidiaries on a consolidated basis including HGST and SanDisk.

Intellectual Property Litigation

In May 2016, Lambeth Magnetic Structures, LLC ("Lambeth") filed a complaint with the U.S. District Court for the Western District of Pennsylvania against WD and certain of its subsidiaries alleging infringement of U.S. Patent No. 7,128,988. The complaint seeks unspecified monetary damages and injunctive relief. The '988 patent, entitled "Magnetic Material Structures, Devices and Methods," allegedly relates to a magnetic material structure for hard disk drive devices. Mediation in this matter was held on August 16, 2019, and the parties reached an agreement in principle to settle the case for an immaterial amount, a portion of which has been previously accrued in the Company's financial statements. The parties expect to formalize the settlement and obtain court dismissal of the litigation during the first half of fiscal 2020. In the event the settlement is not formalized and the agreement in principle is deemed not enforceable, the Company intends to continue to defend itself vigorously in this matter.

Securities

Beginning in March 2015, SanDisk and two of its officers, Sanjay Mehrotra and Judy Bruner, were named in three putative class action lawsuits filed with the U.S. District Court for the Northern District of California. Two complaints are brought on behalf of a purported class of purchasers of SanDisk's securities between October 2014 and March 2015, and one is brought on behalf of a purported class of purchasers of SanDisk's securities between April 2014 and April 2015. The complaints generally allege violations of federal securities laws arising out of alleged misstatements or omissions by the defendants during the alleged class periods. The complaints seek, among other things, damages and fees and costs. In July 2015, the District Court consolidated the cases and appointed Union Asset Management Holding AG and KBC Asset Management NV as lead plaintiffs. The lead plaintiffs filed an amended complaint in August 2015. In January 2016, the District Court granted the defendants' motion to dismiss and dismissed the amended complaint with leave to amend. In February 2016, the District Court issued an order appointing as new lead plaintiffs Bristol Pension Fund; City of Milford, Connecticut Pension & Retirement Board; Pavers and Road Builders Pension, Annuity and Welfare Funds; the Newport News Employees' Retirement Fund; and Massachusetts Laborers' Pension Fund (collectively, the "Institutional Investor Group"). In March 2016, the Institutional Investor Group filed an amended complaint. In June 2016, the District Court granted the defendants' motion to dismiss and dismissed the amended complaint with leave to amend. In July 2016, the Institutional Investor Group filed a further amended complaint. In June 2017, the District Court denied the defendants' motion to dismiss. In September 2018, the District Court granted the Institutional Investor Group's motion to certify a class of all persons and entities who purchased or otherwise acquired SanDisk's publicly traded common stock between October 2014 and April 2015, excluding those who purchased or otherwise acquired SanDisk's publicly traded common stock during the class period but who sold their stock prior to the first corrective disclosure in March 2015. The Institutional Investor Group alleged artificial inflation in the price of SanDisk's publicly traded common stock of $9.04 per share from October 16, 2014 through March 25, 2015, $2.26 per share on March 26, 2015, and $1.35 per share from March 27, 2015 through April 15, 2015. In March 2019, the parties reached a settlement of all claims in this matter, subject to formal ratification by party representatives and approval by the court. In May 2019, the court granted the motion for preliminary approval and scheduled a hearing on the final approval for September 2019. The charge related to the settlement was recorded in Selling, general and administrative expense.

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Tax

For disclosures regarding statutory notices of deficiency issued by the IRS on June 28, 2018 and December 10, 2018, and petitions filed by the Company with the U.S. Tax Court in September 2018 and March 2019, see Note 13, *Income Tax Expense.*

Other Matters

In the normal course of business, the Company is subject to other legal proceedings, lawsuits and other claims. Although the ultimate aggregate amount of probable monetary liability or financial impact with respect to these other matters is subject to many uncertainties, management believes that any monetary liability or financial impact to the Company from these other matters, individually and in the aggregate, would not be material to the Company's financial condition, results of operations or cash flows. However, any monetary liability and financial impact to the Company from these other matters could differ materially from the Company's expectations.

Note 17. Separate Financial Information of Guarantor Subsidiaries

The Company's 2026 Senior Unsecured Notes are fully and unconditionally guaranteed, jointly and severally, on a senior unsecured basis, subject to certain customary guarantor release conditions, by certain 100% owned material domestic subsidiaries of the Company (or the "Guarantor Subsidiaries"). The guarantee by a Guarantor Subsidiary will be released in the event of (i) the release of a Guarantor Subsidiary from its guarantee of indebtedness under the Credit Agreement or other indebtedness that would have required the Guarantor Subsidiary to guarantee the 2026 Senior Unsecured Notes, (ii) the sale, issuance or other disposition of capital stock of a Guarantor Subsidiary such that it is no longer a restricted subsidiary under the indenture governing the 2026 Senior Unsecured Notes, (iii) the sale of all or substantially all of a Guarantor Subsidiary's assets, (iv) the Company's exercise of its defeasance options under the indenture governing the 2026 Senior Unsecured Notes, (v) the dissolution or liquidation of a Guarantor Subsidiary or (vi) the sale of all the equity interest in a Guarantor Subsidiary. The Company's other domestic subsidiaries and its foreign subsidiaries (collectively, the "Non-Guarantor Subsidiaries") do not guarantee the 2026 Senior Unsecured Notes. The following condensed consolidating financial information reflects the summarized financial information of Western Digital Corporation ("Parent"), the Guarantor Subsidiaries on a combined basis, and the Non-Guarantor Subsidiaries on a combined basis.

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Balance Sheet
As of June 28, 2019

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
ASSETS					
Current assets:					
Cash and cash equivalents	$ 8	$ 985	$ 2,462	$ —	$ 3,455
Accounts receivable, net	—	779	425	—	1,204
Intercompany receivables	2,409	5,808	1,581	(9,798)	—
Inventories	—	990	2,438	(145)	3,283
Loans due from consolidated affiliates	—	—	50	(50)	—
Other current assets	2	251	282	—	535
Total current assets	2,419	8,813	7,238	(9,993)	8,477
Property, plant and equipment, net	—	873	1,970	—	2,843
Notes receivable and investments in Flash Ventures	—	—	2,791	—	2,791
Goodwill	—	388	9,688	—	10,076
Other intangible assets, net	—	23	1,688	—	1,711
Investments in consolidated subsidiaries	20,772	16,355	—	(37,127)	—
Loans due from consolidated affiliates	—	674	—	(674)	—
Other non-current assets	60	51	361	—	472
Total assets	$ 23,251	$ 27,177	$ 23,736	$ (47,794)	$ 26,370
LIABILITIES AND SHAREHOLDERS' EQUITY					
Current liabilities:					
Accounts payable	$ —	$ 195	$ 1,372	$ —	$ 1,567
Accounts payable to related parties	—	—	331	—	331
Intercompany payables	1,871	3,515	4,412	(9,798)	—
Accrued expenses	195	522	579	—	1,296
Accrued compensation	—	214	133	—	347
Loans due to consolidated affiliates	—	50	—	(50)	—
Current portion of long-term debt	276	—	—	—	276
Total current liabilities	2,342	4,496	6,827	(9,848)	3,817
Long-term debt	10,213	—	33	—	10,246
Loans due to consolidated affiliates	674	—	—	(674)	—
Other liabilities	55	1,795	490	—	2,340
Total liabilities	13,284	6,291	7,350	(10,522)	16,403
Total shareholders' equity	9,967	20,886	16,386	(37,272)	9,967
Total liabilities and shareholders' equity	$ 23,251	$ 27,177	$ 23,736	$ (47,794)	$ 26,370

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Balance Sheet
As of June 29, 2018

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
ASSETS					
Current assets:					
Cash and cash equivalents	$ 40	$ 668	$ 4,297	$ —	$ 5,005
Accounts receivable, net	—	1,358	839	—	2,197
Intercompany receivables	1,903	4,256	2,674	(8,833)	—
Inventories	—	990	2,159	(205)	2,944
Other current assets	20	195	277	—	492
Total current assets	1,963	7,467	10,246	(9,038)	10,638
Property, plant and equipment, net	—	1,092	2,003	—	3,095
Notes receivable and investments in Flash Ventures	—	—	2,105	—	2,105
Goodwill	—	387	9,688	—	10,075
Other intangible assets, net	—	38	2,642	—	2,680
Investments in consolidated subsidiaries	20,847	19,893	—	(40,740)	—
Loans due from consolidated affiliates	943	16	—	(959)	—
Other non-current assets	182	29	431	—	642
Total assets	$ 23,935	$ 28,922	$ 27,115	$ (50,737)	$ 29,235
LIABILITIES AND SHAREHOLDERS' EQUITY					
Current liabilities:					
Accounts payable	$ —	$ 279	$ 1,986	$ —	$ 2,265
Accounts payable to related parties	—	—	259	—	259
Intercompany payables	1,066	4,648	3,119	(8,833)	—
Accrued expenses	198	505	571	—	1,274
Accrued compensation	—	297	182	—	479
Current portion of long-term debt	179	—	—	—	179
Total current liabilities	1,443	5,729	6,117	(8,833)	4,456
Long-term debt	10,962	—	31	—	10,993
Loans due to consolidated affiliates	—	427	532	(959)	—
Other liabilities	(1)	1,768	488	—	2,255
Total liabilities	12,404	7,924	7,168	(9,792)	17,704
Total shareholders' equity	11,531	20,998	19,947	(40,945)	11,531
Total liabilities and shareholders' equity	$ 23,935	$ 28,922	$ 27,115	$ (50,737)	$ 29,235

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Statement of Operations
For the year ended June 28, 2019

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Revenue, net	$ —	$ 12,860	$ 17,189	$ (13,480)	$ 16,569
Cost of revenue	—	11,237	15,138	(13,558)	12,817
Gross profit	—	1,623	2,051	78	3,752
Operating expenses:					
Research and development	—	1,376	806	—	2,182
Selling, general and administrative	2	865	450	—	1,317
Intercompany operating expense (income)	16	(1,523)	1,507	—	—
Employee termination, asset impairment, and other charges	—	85	81	—	166
Total operating expenses	18	803	2,844	—	3,665
Operating income (loss)	(18)	820	(793)	78	87
Interest and other income (expense):					
Interest income	10	25	46	(24)	57
Interest expense	(478)	(9)	(6)	24	(469)
Other income (expense), net	1	(6)	43	—	38
Total interest and other income (expense), net	(467)	10	83	—	(374)
Income (loss) before taxes	(485)	830	(710)	78	(287)
Equity in earnings from subsidiaries	(418)	(867)	—	1,285	—
Income tax expense (benefit)	(149)	457	159	—	467
Net loss	$ (754)	$ (494)	$ (869)	$ 1,363	$ (754)

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Statement of Operations
For the year ended June 29, 2018

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Revenue, net	$ —	$ 14,913	$ 20,155	$ (14,421)	$ 20,647
Cost of revenue	—	12,913	14,573	(14,544)	12,942
Gross profit	—	2,000	5,582	123	7,705
Operating expenses:					
Research and development	—	1,551	849	—	2,400
Selling, general and administrative	8	1,044	421	—	1,473
Intercompany operating expense (income)	—	(1,626)	1,626	—	—
Employee termination, asset impairment, and other charges	1	47	167	—	215
Total operating expenses	9	1,016	3,063	—	4,088
Operating income (loss)	(9)	984	2,519	123	3,617
Interest and other income (expense):					
Interest income	211	8	51	(210)	60
Interest expense	(674)	(21)	(191)	210	(676)
Other expense, net	(905)	(9)	(2)	—	(916)
Total interest and other expense, net	(1,368)	(22)	(142)	—	(1,532)
Income (loss) before taxes	(1,377)	962	2,377	123	2,085
Equity in earnings from subsidiaries	1,698	2,223	—	(3,921)	—
Income tax expense (benefit)	(354)	1,633	131	—	1,410
Net income	$ 675	$ 1,552	$ 2,246	$ (3,798)	$ 675

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Statement of Operations
For the year ended June 30, 2017

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Revenue, net	$ —	$ 14,732	$ 16,381	$ (12,020)	$ 19,093
Cost of revenue	—	12,786	12,203	(11,968)	13,021
Gross profit	—	1,946	4,178	(52)	6,072
Operating expenses:					
Research and development	—	1,619	822	—	2,441
Selling, general and administrative	6	1,006	433	—	1,445
Intercompany operating expense (income)	—	(1,736)	1,736	—	—
Employee termination, asset impairment, and other charges	—	88	144	—	232
Total operating expenses	6	977	3,135	—	4,118
Operating income (loss)	(6)	969	1,043	(52)	1,954
Interest and other income (expense):					
Interest income	347	11	22	(354)	26
Interest expense	(843)	(10)	(348)	354	(847)
Other income (expense), net	(290)	49	(61)	(62)	(364)
Total interest and other income (expense), net	(786)	50	(387)	(62)	(1,185)
Income (loss) before taxes	(792)	1,019	656	(114)	769
Equity in earnings from subsidiaries	907	287	—	(1,194)	—
Income tax expense (benefit)	(282)	259	395	—	372
Net income	$ 397	$ 1,047	$ 261	$ (1,308)	$ 397

Condensed Consolidating Statement of Comprehensive Income (Loss)
For the year ended June 28, 2019

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Net loss	$ (754)	$ (494)	$ (869)	$ 1,363	$ (754)
Other comprehensive income (loss), before tax:					
Actuarial pension loss	(39)	(39)	(39)	78	(39)
Foreign currency translation adjustment	28	31	31	(62)	28
Net unrealized gain (loss), on derivative contracts and available-for-sale securities	(39)	40	38	(78)	(39)
Total other comprehensive income (loss), before tax	(50)	32	30	(62)	(50)
Income tax benefit related to items of other comprehensive income (loss)	21	1	2	(3)	21
Other comprehensive income (loss), net of tax	(29)	33	32	(65)	(29)
Total comprehensive loss	$ (783)	$ (461)	$ (837)	$ 1,298	$ (783)

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Statement of Comprehensive Income (Loss)
For the year ended June 29, 2018

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Net income	$ 675	$ 1,552	$ 2,246	$ (3,798)	$ 675
Other comprehensive income, before tax:					
Actuarial pension loss	(2)	(2)	(2)	4	(2)
Foreign currency translation adjustment	18	15	15	(30)	18
Net unrealized gain on derivative contracts and available-for-sale securities	7	(10)	(6)	16	7
Total other comprehensive income, before tax	23	3	7	(10)	23
Income tax benefit (expense) related to items of other comprehensive income	(4)	1	(1)	—	(4)
Other comprehensive income, net of tax	19	4	6	(10)	19
Total comprehensive income	$ 694	$ 1,556	$ 2,252	$ (3,808)	$ 694

Condensed Consolidating Statement of Comprehensive Income (Loss)
For the year ended June 30, 2017

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Net income	$ 397	$ 1,047	$ 261	$ (1,308)	$ 397
Other comprehensive loss, before tax:					—
Actuarial pension gain	39	39	39	(78)	39
Foreign currency translation adjustment	(115)	(113)	(136)	249	(115)
Net unrealized loss on derivative contracts and available-for-sale securities	(75)	(75)	(73)	148	(75)
Total other comprehensive loss, before tax	(151)	(149)	(170)	319	(151)
Income tax expense related to items of other comprehensive loss	(10)	(10)	(8)	18	(10)
Other comprehensive loss, net of tax	(161)	(159)	(178)	337	(161)
Total comprehensive income	$ 236	$ 888	$ 83	$ (971)	$ 236

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Statement of Cash Flows
For the year ended June 28, 2019

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Cash flows from operating activities					
Net cash provided by (used in) operating activities	$ 160	$ (1,286)	$ 2,723	$ (50)	$ 1,547
Cash flows from investing activities					
Purchases of property, plant and equipment	—	(250)	(626)	—	(876)
Proceeds from the sale of property, plant and equipment	—	116	3	—	119
Purchases of investments	—	(11)	(68)	—	(79)
Proceeds from sale of investments	—	—	175	—	175
Proceeds from maturities of investments	—	—	7	—	7
Notes receivable issuances to Flash Ventures	—	—	(1,364)	—	(1,364)
Notes receivable proceeds from Flash Ventures	—	—	766	—	766
Strategic investments and other, net	—	2	(22)	—	(20)
Intercompany loan from (to) consolidated affiliates	943	(659)	1	(285)	—
Advances from (to) parent and consolidated affiliates	(342)	342	—	—	—
Net cash provided by (used in) investing activities	601	(460)	(1,128)	(285)	(1,272)
Cash flows from financing activities				—	
Issuance of stock under employee stock plans	118	—	—	—	118
Taxes paid on vested stock awards under employee stock plans	(115)	—	—	—	(115)
Repurchases of common stock	(563)	—	—	—	(563)
Dividends paid to shareholders	(584)	—	—	—	(584)
Repayment of debt	(181)	—	—	—	(181)
Repayment of revolving credit facility	(500)	—	—	—	(500)
Debt issuance costs	(4)	—	—	—	(4)
Intercompany loan from (to) consolidated affiliates	674	(377)	(582)	285	—
Change in investment in consolidated subsidiaries	362	2,440	(2,852)	50	—
Net cash provided by (used in) financing activities	(793)	2,063	(3,434)	335	(1,829)
Effect of exchange rate changes on cash	—	—	4	—	4
Net increase (decrease) in cash and cash equivalents	(32)	317	(1,835)	—	(1,550)
Cash and cash equivalents, beginning of year	40	668	4,297	—	5,005
Cash and cash equivalents, end of period	$ 8	$ 985	$ 2,462	$ —	$ 3,455

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Statement of Cash Flows
For the year ended June 29, 2018

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Cash flows from operating activities					
Net cash provided by (used in) operating activities	$ (144)	$ 211	$ 4,158	$ (20)	$ 4,205
Cash flows from investing activities					
Purchases of property, plant and equipment	—	(220)	(615)	—	(835)
Proceeds from the sale of property, plant and equipment	—	—	26	—	26
Acquisitions, net of cash acquired	—	(94)	(6)	—	(100)
Purchases of investments	—	(21)	(68)	—	(89)
Proceeds from sale of investments	—	—	48	—	48
Proceeds from maturities of investments	—	—	19	—	19
Notes receivable issuances to Flash Ventures	—	—	(1,313)	—	(1,313)
Notes receivable proceeds from Flash Ventures	—	—	571	—	571
Strategic investments and other, net	—	(2)	20	—	18
Intercompany loan from consolidated affiliates	3,757	—	—	(3,757)	—
Advances from (to) parent and consolidated affiliates	(86)	86	—	—	—
Net cash provided by (used in) investing activities	3,671	(251)	(1,318)	(3,757)	(1,655)
Cash flows from financing activities					
Issuance of stock under employee stock plans	220	—	—	—	220
Taxes paid on vested stock awards under employee stock plans	(171)	—	—	—	(171)
Repurchases of common stock	(591)	—	—	—	(591)
Dividends paid to shareholders	(593)	—	—	—	(593)
Settlement of debt hedge contracts	28	—	—	—	28
Repayment of debt	(17,074)	—	—	—	(17,074)
Proceeds from debt	13,840	—	—	—	13,840
Proceeds from revolving credit facility	500	—	—	—	500
Debt issuance costs	(59)	—	—	—	(59)
Intercompany loan to consolidated affiliates	—	(119)	(3,638)	3,757	—
Change in investment in consolidated subsidiaries	395	(385)	(30)	20	—
Net cash used in financing activities	(3,505)	(504)	(3,668)	3,777	(3,900)
Effect of exchange rate changes on cash	—	—	1	—	1
Net increase (decrease) in cash and cash equivalents	22	(544)	(827)	—	(1,349)
Cash and cash equivalents, beginning of year	18	1,212	5,124	—	6,354
Cash and cash equivalents, end of year	$ 40	$ 668	$ 4,297	$ —	$ 5,005

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Condensed Consolidating Statement of Cash Flows
For the year ended June 30, 2017

	Parent	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Total Company
			(in millions)		
Cash flows from operating activities					
Net cash provided by (used in) operating activities	$ (360)	$ (836)	$ 4,593	$ 40	$ 3,437
Cash flows from investing activities					
Purchases of property, plant and equipment	—	(240)	(338)	—	(578)
Proceeds from the sale of property, plant and equipment	—	—	21	—	21
Purchases of investments	—	—	(281)	—	(281)
Proceeds from sale of investments	—	—	94	—	94
Proceeds from maturities of investments	—	—	417	—	417
Investments in Flash Ventures	—	—	(20)	—	(20)
Notes receivable issuances to Flash Ventures	—	—	(549)	—	(549)
Notes receivable proceeds from Flash Ventures	—	—	292	—	292
Strategic investments and other, net	—	(1)	(31)	—	(32)
Intercompany loans from consolidated affiliates	1,300	39	—	(1,339)	—
Advances from (to) consolidated affiliates	(158)	166	—	(8)	—
Net cash provided by (used in) investing activities	1,142	(36)	(395)	(1,347)	(636)
Cash flows from financing activities					
Issuance of stock under employee stock plans	235	—	—	—	235
Taxes paid on vested stock awards under employee stock plans	(124)	—	—	—	(124)
Excess tax benefits from employee stock plans	119	—	—	—	119
Proceeds from acquired call option	—	—	61	—	61
Settlement of convertible debt	—	—	(492)	—	(492)
Dividends paid to shareholders	(574)	—	—	—	(574)
Settlement of debt hedge contracts	—	(21)	—	—	(21)
Repayment of debt	(8,702)	(2,995)	—	—	(11,697)
Proceeds from debt	7,908	—	—	—	7,908
Debt issuance costs	(10)	—	—	—	(10)
Intercompany loan to consolidated affiliates	—	(5,454)	4,115	1,339	—
Change in investment in consolidated subsidiaries	384	9,348	(9,700)	(32)	—
Net cash provided by (used in) financing activities	(764)	878	(6,016)	1,307	(4,595)
Effect of exchange rate changes on cash	—	—	(3)	—	(3)
Net increase (decrease) in cash and cash equivalents	18	6	(1,821)	—	(1,797)
Cash and cash equivalents, beginning of year	—	1,206	6,945	—	8,151
Cash and cash equivalents, end of year	18	1,212	5,124	—	6,354

WESTERN DIGITAL CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Note 18. Quarterly Results of Operations (unaudited)

	First	Second	Third	Fourth
	(in millions, except per share amounts)			
2019				
Revenue, net	$ 5,028	$ 4,233	$ 3,674	$ 3,634
Gross profit	1,664	1,044	579	465
Operating income (loss)	686	176	(394)	(381)
Net income (loss)	511	(487)	(581)	(197)
Basic income (loss) per common share	$ 1.75	$ (1.68)	$ (1.99)	$ (0.67)
Diluted income (loss) per common share	$ 1.71	$ (1.68)	$ (1.99)	$ (0.67)

	First	Second	Third	Fourth
	(in millions, except per share amounts)			
2018				
Revenue, net	$ 5,181	$ 5,336	$ 5,013	$ 5,117
Gross profit	1,913	2,013	1,927	1,852
Operating income (loss)	905	955	914	843
Net income (loss)	681	(823)	61	756
Basic income (loss) per common share	$ 2.31	$ (2.78)	$ 0.20	$ 2.53
Diluted income (loss) per common share	$ 2.23	$ (2.78)	$ 0.20	$ 2.46

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

None.

Item 9A. *Controls and Procedures*

Evaluation of Disclosure Controls and Procedures

As required by SEC Rule 13a-15(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as such term is defined in Rule 13a-15(e) under the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K.

Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this Annual Report on Form 10-K, our disclosure controls and procedures were effective.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that the transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Our management evaluated the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control — Integrated Framework (2013).* Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of the end of the period covered by this Annual Report on Form 10-K. KPMG LLP, our independent registered public accounting firm, which audited the Consolidated Financial Statements included in this Annual Report on Form 10-K, has issued an audit report on our internal control over financial reporting. See Report of Independent Registered Public Accounting Firm herein.

Changes in Internal Control over Financial Reporting

There has been no change in our internal control over financial reporting during the fourth fiscal quarter ended June 28, 2019, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

We are implementing an enterprise resource planning ("ERP") system on a worldwide basis, which is expected to improve the efficiency of certain financial and related transactional processes. The gradual implementation is expected to occur in phases over the next several years. We have completed the implementation of certain processes, including the financial consolidation and reporting, fixed assets, supplier management and indirect procure-to-pay processes, and have revised and updated the related controls. These changes did not materially affect our internal control over financial reporting. As we implement the remaining functionality under this ERP system over the next several years, we will continue to assess the impact on our internal control over financial reporting.

Inherent Limitations of Effectiveness of Controls

Our management, including our Chief Executive Officer and our Chief Financial Officer, does not expect our internal controls over financial reporting will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the benefits of controls must be considered relative to their costs. Because of the inherent limitations in a system of internal control over financial reporting, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B.*Other Information*

None.

PART III

Item 10.*Director, Executive Officers and Corporate Governance*

There is incorporated herein by reference the information required by this Item included in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the fiscal year ended June 28, 2019. In addition, our Board of Directors has adopted a Code of Business Ethics that applies to all of our directors, employees and officers, including our Chief Executive Officer and Chief Financial Officer. The current version of the Code of Business Ethics is available on our website under the Corporate Governance section at *www.wdc.com*. To the extent required by rules adopted by the SEC and The Nasdaq Stock Market LLC, we intend to promptly disclose future amendments to certain provisions of the Code of Business Ethics, or waivers of such provisions granted to executive officers and directors, on our website under the Corporate Governance section at *www.wdc.com*.

Item 11.*Executive Compensation*

There is incorporated herein by reference the information required by this Item included in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the fiscal year ended June 28, 2019.

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

There is incorporated herein by reference the information required by this Item included in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the fiscal year ended June 28, 2019.

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

There is incorporated herein by reference the information required by this Item included in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the fiscal year ended June 28, 2019.

Item 14.*Principal Accounting Fees and Services*

There is incorporated herein by reference the information required by this Item included in the Company's Proxy Statement for the 2019 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the fiscal year ended June 28, 2019.

PART IV

Item 15. *Exhibits, Financial Statement Schedules*

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

(1) *Financial Statements.* The financial statements included in Part II, Item 8 of this document are filed as part of this Annual Report on Form 10-K.

(2) *Financial Statement Schedules.*

All schedules are omitted as the required information is immaterial, inapplicable or the information is presented in the Consolidated Financial Statements or related Notes.

(3) *Exhibits.* The exhibits listed in the Exhibit Index below are filed with, or incorporated by reference in, this Annual Report on Form 10-K, as specified in the Exhibit List, from exhibits previously filed with the SEC. Certain agreements listed in the Exhibit List that we have filed or incorporated by reference may contain representations and warranties by us or our subsidiaries. These representations and warranties have been made solely for the benefit of the other party or parties to such agreements and (i) may have been qualified by disclosures made to such other party or parties, (ii) were made only as of the date of such agreements or such other date(s) as may be specified in such agreements and are subject to more recent developments, which may not be fully reflected in our public disclosures, (iii) may reflect the allocation of risk among the parties to such agreements and (iv) may apply materiality standards different from what may be viewed as material to investors. Accordingly, these representations and warranties may not describe the actual state of affairs at the date hereof and should not be relied upon.

EXHIBIT INDEX

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation of Western Digital Corporation, as amended to date (Filed as Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 8, 2006)
3.2	Amended and Restated By-Laws of Western Digital Corporation, as amended effective as of May 2, 2018 (Filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on May 7, 2018)
4.1	Description of Western Digital Corporation's Capital Stock†
4.2	Indenture (including Form of 0.5% Convertible Senior Notes due 2020), dated as of October 29, 2013, by and between SanDisk Corporation and The Bank of New York Mellon Trust Company, N.A. (Filed as Exhibit 4.1 to SanDisk Corporation's Current Report on Form 8-K (File No. 000-26734) with the Securities and Exchange Commission on October 29, 2013)
4.3	First Supplemental Indenture to the Indenture filed as Exhibit 4.2 hereto, dated as of May 12, 2016, among SanDisk Corporation, The Bank of New York Mellon Trust Company, N.A., as trustee, and Western Digital Corporation (Filed as Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on May 12, 2016)
4.4	Indenture (including Form of 4.750% Senior Notes due 2026), dated as of February 13, 2018, among Western Digital Corporation; HGST, Inc., WD Media, LLC, Western Digital (Fremont), LLC and Western Digital Technologies, Inc., as guarantors; and U.S. Bank National Association, as trustee (Filed as Exhibit 4.1 to the Company's Current Report on Form 8-K (File No. 333-222762) with the Securities and Exchange Commission on February 13, 2018)
4.5	Indenture (including Form of 1.50% Convertible Senior Notes due 2024), dated as of February 13, 2018, among Western Digital Corporation; HGST, Inc., WD Media, LLC, Western Digital (Fremont), LLC and Western Digital Technologies, Inc., as guarantors; and U.S. Bank National Association, as trustee (Filed as Exhibit 4.2 to the Company's Current Report on Form 8-K (File No. 333-222762) with the Securities and Exchange Commission on February 13, 2018)
10.1	Western Digital Corporation Amended and Restated 2017 Performance Incentive Plan (formerly named the Western Digital Corporation Amended and Restated 2004 Performance Incentive Plan), amended and restated as of August 2, 2018 (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on November 7, 2018)*
10.1.1	Form of Notice of Grant of Stock Option and Option Agreement - Executives, under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.1.1 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)*
10.1.2	Form of Notice of Grant of Stock Option and Option Agreement - Non-Executives, under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.1.2 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)*
10.1.3	Form of Notice of Grant of Stock Units and Stock Unit Award Agreement - Executives, under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.1.3 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)*
10.1.4	Form of Notice of Grant of Stock Units and Stock Unit Award Agreement, under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.1.4 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)*
10.1.5	Form of Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement - Executives, under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.1.5 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)*
10.1.6	Form of Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement - Financial Measures, under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 6, 2018)*
10.1.7	Form of Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement - TSR Measure, under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 6, 2018)*
10.1.8	Form of Notice of Grant of Stock Option and Option Agreement - Executives, as amended on November 3, 2015, under the Western Digital Corporation Amended and Restated 2004 Performance Incentive Plan (now named the Western Digital Corporation 2017 Performance Incentive Plan) (Filed as Exhibit 10.1.1 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 10, 2016)*
10.1.9	Form of Notice of Grant of Stock Option and Option Agreement - Non-Executives, as amended on November 3, 2015, under the Western Digital Corporation Amended and Restated 2004 Performance Incentive Plan (now named the Western Digital Corporation 2017 Performance Incentive Plan) (Filed as Exhibit 10.1.2 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 10, 2016)*
10.1.10	Form of Notice of Grant of Stock Units and Stock Unit Award Agreement - Executives, as amended on November 3, 2015, under the Western Digital Corporation Amended and Restated 2004 Performance Incentive Plan (now named the Western Digital Corporation 2017 Performance Incentive Plan) (Filed as Exhibit 10.1.3 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 10, 2016)*

Exhibit Number	Description
10.1.11	Form of Notice of Grant of Stock Units and Stock Unit Award Agreement, as amended on November 3, 2015, under the Western Digital Corporation Amended and Restated 2004 Performance Incentive Plan (now named the Western Digital Corporation 2017 Performance Incentive Plan) (Filed as Exhibit 10.1.4 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 10, 2016)*
10.1.12	Form of Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement for Mark Long, dated September 17, 2015, under the Western Digital Corporation Amended and Restated 2004 Performance Incentive Plan (now named the Western Digital Corporation 2017 Performance Incentive Plan) (Filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 10, 2015)*
10.1.13	Form of Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement (revised March 2016) under the Western Digital Corporation Amended and Restated 2004 Performance Incentive Plan (now named the Western Digital Corporation 2017 Performance Incentive Plan) (Filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on May 9, 2016)*
10.1.14	Western Digital Corporation Amended and Restated 2004 Performance Incentive Plan (now named the Western Digital Corporation 2017 Performance Incentive Plan) Non-Employee Director Option Grant Program, as amended September 6, 2012, and Form of Notice of Grant of Stock Option and Option Agreement - Non-Employee Directors (Filed as Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 2, 2012)*
10.1.15	Western Digital Corporation 2017 Performance Incentive Plan Non-Employee Director Restricted Stock Unit Grant Program, as amended November 1, 2017 (Filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)*
10.1.16	Form of Notice of Grant of Restricted Stock Units and Restricted Stock Unit Award Agreement - Vice President and Above under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 6, 2018)*
10.1.17	Form of Notice of Grant of Restricted Stock Units and Restricted Stock Unit Award Agreement under the Western Digital Corporation 2017 Performance Incentive Plan (Filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 6, 2018)*
10.1.18	Western Digital Corporation Incentive Compensation Plan, as Amended and Restated August 5, 2015 (Filed as Exhibit 10.1.8 to the Company's Annual Report on Form 10-K (File No. 1-08703) with the Securities and Exchange Commission on August 21, 2015)*
10.2	Western Digital Corporation Amended and Restated 2005 Employee Stock Purchase Plan, as amended August 2, 2018 (Filed as Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on November 7, 2018)*
10.3	SanDisk Corporation 2013 Incentive Plan (Filed as Exhibit 4.2 to the Company's Registration Statement on Form S-8 (File No. 333-211420) with the Securities and Exchange Commission on May 17, 2016)*
10.4	Amended and Restated Deferred Compensation Plan, amended and restated effective January 1, 2013 (Filed as Exhibit 10.4 to the Company's Annual Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 2, 2012)*
10.5	Western Digital Corporation Amended and Restated Change of Control Severance Plan, amended and restated as of November 3, 2015 (Filed as Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on November 5, 2015)*
10.6	Western Digital Corporation Executive Severance Plan, amended and restated as of February 2, 2017 (Filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 7, 2017)*
10.7	Form of Indemnity Agreement for Directors of Western Digital Corporation (Filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 8, 2002)*
10.8	Form of Indemnity Agreement for Officers of Western Digital Corporation (Filed as Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on November 8, 2002)*
10.9	Form of Indemnification Agreement entered into between SanDisk Corporation and its directors and officers (Filed as Exhibit 10.10 to the Company's Annual Report on Form 10-K (File No. 1-08703) with the Securities and Exchange Commission on August 24, 2018)*
10.10	Offer Letter, dated as of April 1, 2019, to Robert Eulau (Filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on May 7, 2019)*
10.11	Severance Agreement, dated as of June 15, 2019, by and between Western Digital Corporation and Mark Long*†
10.12	Loan Agreement, dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, and the lenders and financial institutions from time to time party thereto (Filed as Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on May 9, 2016)
10.12.1	Amendment No. 1, dated as of August 17, 2016, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on August 18, 2016)

Exhibit Number	Description
10.12.2	Amendment No. 2, dated as of September 22, 2016, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on September 22, 2016)
10.12.3	Amendment No. 3, dated as of March 14, 2017, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on March 14, 2017)
10.12.4	Amendment No. 4, dated as of March 23, 2017, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on March 23, 2017)
10.12.5	Amendment No. 5, dated as of November 8, 2017, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on November 8, 2017)
10.12.6	Amendment No. 6, dated as of November 29, 2017, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on November 29, 2017)
10.12.7	Amendment No. 7, dated as of February 27, 2018, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on February 27, 2018)
10.12.8	Amendment No. 8, dated as of May 15, 2018, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on May 15, 2018)
10.12.9	Amendment No. 9, dated as of April 29, 2019, to the Loan Agreement dated as of April 29, 2016, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent and collateral agent, the lenders party thereto and the other loan parties thereto (Filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 000-26734) with the Securities and Exchange Commission on May 7, 2019)
10.13	Guaranty Agreement, dated as of April 29, 2016, by and among Western Digital Corporation, the subsidiary guarantors party thereto and JPMorgan Chase Bank, N.A., as administrative agent for the guaranteed creditors (Filed as Exhibit 10.2 to the Company's Current Report on Form 8-K (File No.1-08703) with the Securities and Exchange Commission on April 29, 2016)
10.14	Security Agreement, dated as of May 12, 2016, by and among the debtors (as defined therein) party thereto and JPMorgan Chase Bank, N.A., as collateral agent (Filed as Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 1-08703) with the Securities and Exchange Commission on May 12, 2016)
10.15	Flash Alliance Master Agreement, dated as of July 7, 2006, by and among SanDisk Corporation, Toshiba Corporation and SanDisk (Ireland) Limited (Filed as Exhibit 10.1 to SanDisk Corporation's Quarterly Report on Form 10-Q (File No. 000-26734) with the Securities and Exchange Commission on November 8, 2006)#
10.16	Operating Agreement of Flash Alliance, Ltd., dated as of July 7, 2006, by and between Toshiba Corporation and SanDisk (Ireland) Limited (Filed as Exhibit 10.2 to SanDisk Corporation's Quarterly Report on Form 10-Q (File No. 000-26734) with the Securities and Exchange Commission on November 8, 2006)#
10.17	Joint Venture Restructure Agreement, dated as of January 29, 2009, by and among SanDisk Corporation, SanDisk (Ireland) Limited, SanDisk (Cayman) Limited, Toshiba Corporation, Flash Partners Limited and Flash Alliance Limited (Filed as Exhibit 10.1 to SanDisk Corporation's Quarterly Report on Form 10-Q (File No. 000-26734) with the Securities and Exchange Commission on May 7, 2009)#
10.18	New Y2 Facility Agreement, dated October 20, 2015, by and among SanDisk Corporation, SanDisk (Ireland) Limited, SanDisk (Cayman) Limited, SanDisk Flash B.V., Toshiba Corporation, Flash Partners Limited, Flash Alliance Limited and Flash Forward Limited (Filed as Exhibit 10.37 to SanDisk Corporation's Annual Report on Form 10-K (File No. 000-26734) with the Securities and Exchange Commission on February 12, 2016)#
10.19	FAL Commitment and Extension Agreement, dated as of December 12, 2017, by and among Western Digital Corporation, SanDisk LLC, SanDisk (Ireland) Limited and Toshiba Memory Corporation (Filed as Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)#
10.20	Y6 Facility Agreement, dated as of December 12, 2017, by and among Western Digital Corporation, SanDisk LLC, SanDisk (Cayman) Limited, SanDisk (Ireland) Limited, SanDisk Flash B.V., Flash Partners, Ltd., Flash Alliance, Ltd., Flash Forward, Ltd. and Toshiba Memory Corporation (Filed as Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)#
10.21	K1 Facility Agreement, dated as of May 15, 2019, by and among Western Digital, SanDisk LLC, SanDisk (Cayman) Limited, SanDisk (Ireland) Limited, SanDisk Flash B.V., Flash Partners, Ltd., Flash Alliance, Ltd., Flash Forward Ltd., Toshiba Memory Corporation and Toshiba Memory Corporation Iwate†##

Exhibit Number	Description
10.22	Confidential Settlement and Mutual Release Agreement, dated as of December 12, 2017, by and among Western Digital Corporation, SanDisk LLC, SanDisk (Cayman) Limited, SanDisk (Ireland) Limited, SanDisk Flash B.V., Toshiba Corporation and Toshiba Memory Corporation (Filed as Exhibit 10.8 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)#
10.23	Confidential Settlement and Mutual Release Agreement, dated as of December 12, 2017, by and among Western Digital Corporation, SanDisk LLC, SanDisk (Cayman) Limited, SanDisk (Ireland) Limited, SanDisk Flash B.V., Bain Capital Private Equity, L.P., BCPE Pangea Cayman, L.P., BCPE Pangea Cayman2, Ltd., Bain Capital Fund XII, L.P., Bain Capital Asia Fund III, L.P. and K.K. Pangea (Filed as Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 6, 2018)#
21	Subsidiaries of Western Digital Corporation†
23	Consent of Independent Registered Public Accounting Firm†
31.1	Certification of Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002†
31.2	Certification of Principal Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002†
32.1	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**
32.2	Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**
101.INS	XBRL Instance Document†
101.SCH	XBRL Taxonomy Extension Schema Document†
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document†
101.LAB	XBRL Taxonomy Extension Label Linkbase Document†
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document†
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document†

† Filed with this report.
** Furnished with this report.
* Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to applicable rules of the Securities and Exchange Commission.
# Pursuant to a request for confidential treatment, certain portions of this exhibit have been redacted from the publicly filed document and have been furnished separately to the Securities and Exchange Commission as required by Rule 24b-2 under the Securities Exchange Act of 1934, as amended.
As permitted by Regulation S-K, Item 601(b)(10)(iv) of the Securities Exchange Act of 1934, as amended, certain confidential portions of this exhibit have been redacted from the publicly filed document.

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 Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

WESTERN DIGITAL CORPORATION

By: /s/ ROBERT K. EULAU
Robert K. Eulau
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Dated: August 27, 2019

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

Signature	Title	Date
/s/ STEPHEN D. MILLIGAN Stephen D. Milligan	Chief Executive Officer, Director (Principal Executive Officer)	August 27, 2019
/s/ ROBERT K. EULAU Robert K. Eulau	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	August 27, 2019
/s/ MATTHEW E. MASSENGILL Matthew E. Massengill	Chairman of the Board	August 27, 2019
/s/ KIMBERLY E. ALEXY Kimberly E. Alexy	Director	August 27, 2019
/s/ MARTIN I. COLE Martin I. Cole	Director	August 27, 2019
/s/ KATHLEEN A. COTE Kathleen A. Cote	Director	August 27, 2019
/s/ HENRY T. DENERO Henry T. DeNero	Director	August 27, 2019
/s/ TUNÇ DOLUCA Tunç Doluca	Director	August 27, 2019
/s/ MICHAEL D. LAMBERT Michael D. Lambert	Director	August 27, 2019
/s/ LEN J. LAUER Len J. Lauer	Director	August 27, 2019
/s/ STEPHANIE A. STREETER Stephanie A. Streeter	Director	August 27, 2019

DESCRIPTION OF CAPITAL STOCK OF
WESTERN DIGITAL CORPORATION

The following is a summary of the material provisions of our Amended and Restated Certificate of Incorporation, as amended (our “Certificate of Incorporation”), and Amended and Restated Bylaws (our “Bylaws”), insofar as they relate to the material terms of our capital stock. This summary is qualified in its entirety by reference to our Certificate of Incorporation and Bylaws. Our certificate of incorporation is filed as Exhibit 3.1 to our Quarterly Report on Form 10-Q for the quarter ended December 30, 2005 filed with the Securities and Exchange Commission (the “SEC”) on February 8, 2006. Our bylaws are filed as Exhibit 3.1 to our Current Report on Form 8-K filed with the SEC on May 7, 2018. Additionally, the General Corporation Law of the State of Delaware (the “DGCL”) may also affect the terms of our capital stock.

Authorized Capitalization

Our authorized capital stock consists of:

- 455,000,000 shares of common stock, par value $0.01 per share (“Common Stock”); and
- 5,000,000 shares of preferred stock, par value $0.01 per share (“Preferred Stock”).

As of August 14, 2019, 312,126,108 shares of our common stock were issued, 296,003,875 shares of our common stock were outstanding, and no shares of preferred stock were issued and outstanding.

Common Stock

Subject to the relative rights, limitations and preferences of the holders of any then outstanding Preferred Stock, holders of our Common Stock will be entitled to certain rights, including (i) to share ratably in dividends if, when and as declared by the Company’s Board of Directors (our “Board”) out of funds legally available therefor and (ii) in the event of liquidation, dissolution or winding up of the Company, to share ratably in the distribution of assets legally available therefor, after payment of debts and expenses. Each outstanding share of our Common Stock will entitle the holder to one vote on all matters submitted to a vote of the stockholders, including the election of directors, and the holders of shares of our Common Stock will possess the exclusive voting power. The holders of our Common Stock will not have cumulative voting rights in the election of directors or preemptive rights to subscribe for additional shares of our capital stock. Our Bylaws require that, in uncontested elections, each director be elected by the majority of votes cast with respect to such director. This means that the number of shares voted “for” a director nominee must exceed the number of votes cast “against” that nominee in order for that nominee to be elected.

Holders of shares of our Common Stock will have no preference, conversion, exchange, sinking fund, redemption or appraisal rights. The rights, preferences and privileges of holders of our Common Stock will be subject to the terms of any series of Preferred Stock which the Company may issue in the future. All outstanding shares of common stock are fully paid and nonassessable.

Preferred Stock

Our Board has the authority, within the limitations and restrictions stated in our Certificate of Incorporation, to authorize the issuance of shares of Preferred Stock, in one or more classes or series, and to fix the rights, preferences, privileges and restrictions thereof, including dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, preemptive rights and the number of shares constituting any series or the designation of such series. The issuance of Preferred Stock could have the effect of decreasing the market price of our Common Stock and could adversely affect the voting and other rights of the holders of our Common Stock.

Anti-Takeover Effect of Our Certificate of Incorporation and Bylaws and Delaware Law

Our Certificate of Incorporation and Bylaws include provisions, summarized below, that are intended to discourage and prevent coercive takeover practices and inadequate takeover bids. These provisions are designed to encourage persons seeking to acquire control of the Company to first negotiate with our Board. They are also intended to provide our management with the flexibility to enhance the likelihood of continuity and stability if our Board determines that a takeover is not in the best interests of our stockholders. These provisions, however, could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in our control or management.

Special Stockholder Meetings

Under our Bylaws, only our Board, the Chairman of the Board or our President may call special meetings of stockholders. Stockholders do not have the authority to call a special meeting of stockholders.

Requirements for Advance Notification of Stockholder Nominations and Proposals

Our stockholders must comply with advance notice procedures set forth in our Bylaws to bring business before or nominate directors for election at a meeting of stockholders.

Elimination of Stockholder Action by Written Consent

The DGCL permits stockholder action by written consent unless the corporation’s certificate of incorporation provides otherwise. Our Certificate of Incorporation eliminates the right of stockholders to act by written consent without a meeting.

No Cumulative Voting

Under Delaware law, cumulative voting for the election of directors is not permitted unless a corporation's certificate of incorporation authorizes cumulative voting. Our Certificate of Incorporation and Bylaws do not provide for cumulative voting in the election of directors. The absence of cumulative voting makes it more difficult for a minority stockholder to gain a seat on our Board to influence our Board's decision regarding a takeover.

Authorized but Unissued Shares

Subject to the requirements of The NASDAQ Stock Market LLC and other applicable law, our authorized but unissued shares of Common Stock may be available for future issuance without stockholder approval. We may use these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares of Common Stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Undesignated Preferred Stock

The authorization of undesignated Preferred Stock makes it possible for our Board to issue Preferred Stock with voting or other rights or preferences that could impede the success of any attempt to change control of the Company.

Amendment of Provisions in Certificate of Incorporation and Bylaws

Our Certificate of Incorporation may be amended in accordance with Delaware law. Our Bylaws, or any of them, may be altered, amended or repealed, and new Bylaws may be adopted, (i) by our Board, by vote of a majority of the number of directors then in office as directors, acting at any duly called and held meeting of our Board, or (ii) by the stockholders, provided that notice of such proposed amendment, modification, repeal or adoption is given in the notice of special meeting.

Delaware Anti-Takeover Law

We are subject to Section 203 of the DGCL, which is an anti-takeover law. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years following the date that the person became an interested stockholder, unless the business combination or the transaction in which the person became an interested stockholder is approved in a prescribed manner. Generally, a business combination includes a merger, asset or stock sale, or another transaction resulting in a financial benefit to the interested stockholder. Generally, an interested stockholder is a person who, together with affiliates and associates, owns 15% or more of the corporation's voting stock. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, the board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or
- at or after the time the stockholder became interested, the business combination was approved by the board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Listing

Our Common Stock is listed on The Nasdaq Global Select Market under the trading symbol "WDC."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

EXHIBIT 10.11

CONFIDENTIAL SEPARATION AND GENERAL RELEASE AGREEMENT

In consideration of the covenants undertaken and releases contained in this Confidential Separation and General Release Agreement (this "Agreement"), Mark P. Long ("Executive") and Western Digital Technologies, Inc., a Delaware corporation, including its parent company and any related entities and subsidiaries (collectively referred to as "Western Digital"), agree as follows:

1. Separation from and Termination of Employment. Executive's employment with Western Digital and its affiliated and subsidiary businesses will terminate for all purposes effective June 15, 2019 ("Separation Date"). Executive hereby confirms his resignation, effective as of the Separation Date, from his positions with Western Digital and any of its affiliates and subsidiaries unless provided for sooner in a separate written agreement between Executive and Western Digital. All salary, compensation, benefits and perquisites of employment ceased as of the Separation Date. Executive represents and agrees that he submitted his final expense report, if any, prior to the Separation Date, which Western Digital shall reimburse (to the extent not previously paid) in the ordinary course of business. Within thirty (30) days following the Separation Date, Executive shall receive payment in an amount equal to (a) all final amounts owed to Executive for Executive's regular and usual base salary (if any), and (b) all final amounts owed to Executive for Executive's earned and accrued but unpaid bonuses (if any), in accordance with the terms of the applicable bonus plan (in each case to the extent not previously paid). Executive is not required to sign this Agreement in order to receive the compensation and expense reimbursement described in this Section 1. All payments due to Executive from Western Digital after the Separation Date shall be determined under this Agreement.

2. Separation Benefits.

(a) The benefits ("Separation Benefits") provided under Section 2 of this Agreement are intended to be consistent with the Western Digital Corporation Executive Severance Plan, as such plan may be amended from time to time. Provided that Executive executes and delivers this Agreement to Western Digital and does not revoke this Agreement within the seven (7) day revocation period following the date Executive signs this Agreement (no earlier than the Separation Date) Western Digital shall pay or provide, as the case may be, the following Separation Benefits:

A. Severance Benefit. Executive will receive a cash lump sum payment of One Million Three Hundred Fifty Thousand Dollars ($1,350,000), less standard withholdings and authorized deductions, which payment shall be made on or within thirty (30) days following the Separation Date ("Severance Payment").

B. COBRA Payment. Executive shall receive a cash lump sum payment of Twenty Three Thousand, Four Hundred Fifty Four Dollars ($23,454), which represents a payment equal to the equivalent of eighteen (18) months' payment for health care continuation costs under the Consolidated Omnibus Budget Reconciliation Act of 1985 ("COBRA") ("COBRA Payment") (presently estimated at $1,303 per month), less required tax withholdings and authorized deductions. Such payment shall be made on or within thirty (30) days following the Separation Date. Executive understands that Executive remains responsible for working with Western Digital's outside benefits administrator to elect COBRA benefits and must timely elect coverage in order to be eligible for COBRA benefits, should Executive elect COBRA. A COBRA election form and enrollment package will be mailed to Executive's home address approximately two weeks after the end of the month in which Executive's Separation Date occurs. Enrollment is not automatic. Executive understands that Executive must apply within sixty (60) days after the Separation Date or the date of Executive's notification letter, whichever is later, or Executive will forfeit Executive's right to COBRA coverage.

C. STI Bonus. Executive acknowledges and agrees that, except as set forth in this Section 2(a).C., he has been paid all bonuses he is owed by Western Digital through the Separation Date. For the STI bonus for the Fiscal 2019 bonus cycle, Executive shall receive a payment in the amount of Seven Hundred Eleven Thousand, Five Hundred Sixty Three Dollars ($711,563), less standard withholding and authorized deductions, which represents a payment equal to Executive's prorated bonus opportunity (through the Separation Date) under the STI for the Fiscal Year 2019 bonus cycle, assuming 100% of the performance targets are met regardless of the actual funding by Western Digital. Such payment shall be made on or within thirty (30) days following the Separation Date. Except as set forth in this Section 2(a).C., Executive will not be entitled to additional payments under the STI.

D. Stock Options. Executive's stock options granted by Western Digital that were outstanding on the Separation Date shall vest and become exercisable as of the Separation Date as to any such stock options that would have vested after the Separation Date if Executive had remained employed with Western Digital through December 15, 2019. Any such stock option that remained unvested as of the Separation Date after giving effect to the acceleration contemplated by the preceding sentence terminated as of the Separation Date and Executive shall have no further right with respect thereto or in respect thereof. Notwithstanding anything to the contrary herein, the exercisability of Executive's outstanding vested and exercisable stock options (including any stock options that accelerated pursuant to the first sentence of this paragraph) as of the Separation Date shall continue to be governed by the stock incentive plans and stock option agreements applicable to such options. To the extent that any stock option is vested and exercisable by the Executive on the Executive's Separation Date, it may be exercised by the Executive at any time within three months following the Executive's Separation Date (subject to earlier termination at the end of the option term or in connection with a change in control of Western Digital as provided in the applicable option documentation). Any stock option, to the extent it is exercisable for the three-month period following the Executive's Separation Date and not exercised during such period, shall terminate at the close of business on the last day of the three-month period and Executive shall have no further right with respect thereto or in respect thereof.

E. Stock Units. Executive's Western Digital stock units granted prior to August 30, 2018 that were subject to only time-based (as opposed to performance-based) vesting requirements and were outstanding and unvested on the Separation Date shall vest and become payable as of the Separation Date as to any such stock units that would have vested after the Separation Date if Executive had remained employed with Western Digital through December 15, 2019. Executive's Western Digital stock units granted on August 30, 2018 that were subject to only time-based vesting requirements and were outstanding and unvested on the Separation Date will vest and become payable on January 1, 2020 as to any such units that would have vested after the Separation Date if Executive had remained employed with Western Digital through December 15, 2019. All outstanding stock units held by the Executive shall continue to accrue dividends until such stock units are paid and settled. Stock unit payments will be subject to applicable tax withholding in accordance with the applicable award terms and conditions. Any stock unit that remained unvested as of the Separation Date (and is not to vest on January 1, 2020) after giving effect to the acceleration contemplated by the preceding provisions of this Section 2(a).E terminated as of the Separation Date and Executive shall have no further right with respect thereto or in respect thereof.

F. Performance Stock Units. Executive's Western Digital performance stock units ("PSUs") granted on September 17, 2015 that were outstanding and unvested as of the Separation Date shall vest and become payable with respect to the number of stock units previously credited with respect to the award by the Compensation Committee of the Board of Directors of Western Digital in the ordinary course (as well as any accrued dividend equivalents thereon, to the extent applicable), in accordance with each applicable Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement – Executives and Standard Terms and Conditions for Performance Stock Unit Awards – Executives. In addition, Executive's PSUs granted on August 2, 2017 that were outstanding and unvested as of the Separation Date shall vest and become payable at the target number of stock units subject to the award (as well as any accrued dividend equivalents thereon, to the extent applicable) in accordance with the applicable Notice of Grant of Stock Units and Performance Stock Unit Award Agreement – Executives and Standard Terms and Conditions for Performance Stock Unit Awards – Executives. In addition, Executive's PSUs granted on August 30, 2018 that were outstanding and unvested on the Separation Date shall be prorated and will become vested and payable on August 30, 2021 (the scheduled vesting date) with respect to the number of stock units credited by the Compensation Committee of the Board of Directors of Western Digital in the ordinary course (as well as any accrued dividend equivalents thereon, to the extent applicable), and prorated as referenced above, in accordance with the Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement (for each Financial and TSR Measures) and Standard Terms and Conditions for Performance Stock Unit Award (for each Financial and TSR Measures). All outstanding PSUs held by the Executive shall continue to accrue dividends until such PSUs are paid and settled. PSU payments will be subject to applicable tax withholding in accordance with the applicable award terms and conditions. Any PSUs that remained unvested as of the Separation Date (and are not to vest on August 30, 2021) after giving effect to the acceleration contemplated by the preceding provisions of this Section 2(a).F terminated as of the Separation Date and Executive shall have no further right with respect thereto or in respect thereof.

G. Outplacement Services. Executive shall receive Tier I Executive Outplacement Services for a period of twelve (12) months to be provided by a vendor approved by Western Digital, at Western Digital's sole discretion, for the use of Executive only ("Outplacement Services"). These services are not transferable or assignable to any other person. Executive is not entitled to the cash value of these services, which must be commenced within 30 days of the Separation Date. If tax withholding is required with respect to the Outplacement Services, Executive will make arrangements satisfactory to Western Digital to satisfy such withholding obligations.

H. Insurance and Indemnification. For matters related to Executive's tenure with Western Digital, Executive shall continue to be (a) an insured person under Western Digital's Director and Officer Insurance Policy and (b) entitled to indemnification from Western Digital to the greatest extent permitted by law.

I. Notwithstanding anything to the contrary herein or in any other plan, agreement or arrangement, Executive shall not be entitled to any further additional or continued vesting as to any stock option, stock unit, PSU or other equity or equity-based award on or following the Separation Date except as expressly provided in Sections 2(a).D-F above, and the

Separation Date shall be deemed to be Executive's "Separation Date" (or any similar applicable defined term) for purposes of any outstanding stock option, stock unit, PSU, or other equity or equity-based award agreements.

(b) By signing this Agreement, Executive acknowledges and agrees that Executive shall not accrue or be entitled to any payments or benefits beyond the Separation Date except for the Separation Benefits listed in Section 2(a) of the Agreement. Executive acknowledges that the Separation Benefits are an additional benefit beyond that to which Executive is entitled to, and given in consideration for Executive's promises in this Agreement, and that such Separation Benefits are contingent upon Executive's execution of and not revoking this Agreement. The Separation Benefits are inclusive of any and all of Executive's incurred or alleged fees, expenses, and/or costs which relate in any way to Western Digital, including attorney's fees.

(c) The amount of the Severance Payment, COBRA Payment, and the STI bonus payment provided for in Section 2(a).C and (if required under applicable tax law) the amounts paid or provided as the Outplacement Services, will be reported on Executive's Form W-2 as income for Executive in the applicable year. In addition, amounts relating to the vesting or payment of stock units and PSUs, as well as amounts relating to the exercise of certain stock options, will be reported on Executive's Form W-2 as income in the applicable year.

3. <u>General Release By Executive</u>

A. Executive understands and agrees that, by signing this Agreement, in exchange for the Separation Benefits that Executive will receive under Section 2(a) above, Executive is waiving, releasing and discharging, and promising not to sue, Western Digital Corporation and each and all of its divisions, subsidiaries, parents, predecessors, successors, assigns, and affiliated or related corporations and entities, past and present, including but not limited to Western Digital Technologies, Inc., Western Digital (Fremont), LLC, WD Media, LLC, and HGST, Inc., as well as each and all of its and their owners, trustees, officers, directors, managers, shareholders, members, partners, administrators, fiduciaries, representatives, attorneys, assignees, successors, insurers, benefit plans, agents and employees, past and present, and each of them (collectively, "Released Parties"), from and with respect to any and all claims, wages, demands, actions, class actions, rights, liens, agreements, contracts, covenants, suits, causes of action, charges, grievances, obligations, debts, costs, expenses, penalties, attorneys' fees, damages, judgments, orders and liabilities of any kind, known or unknown, suspected or unsuspected, and whether or not concealed or hidden, arising out of or in any way connected with Executive's employment relationship with, or the termination of Executive's employment with, any of the Released Parties, including but in no way limited to, any act or omission committed or omitted prior to the date of execution of this Agreement. This general release of claims includes, but is in no way limited to, any and all wage and hour claims, claims for wrongful discharge, breach of contract, violation of public policy, tort, or violation of any statute, constitution or regulation, including but not limited to any claim under Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967, as amended ("ADEA"), the Employee Retirement Income Security Act of 1974 ("ERISA"), the Americans with Disabilities Act of 1990, the Older Workers Benefits Protection Act ("OWBPA"), the Fair Labor Standards Act ("FLSA"), the federal Consolidated Omnibus Budget Reconciliation Act of 1985 ("COBRA") and Cal-COBRA, the Immigration and Nationality Act section 1324a, the federal Worker Adjustment and Retraining Notification Act ("WARN"), California WARN Labor Code sections 1400 *et seq*., the California Fair

Employment and Housing Act ("FEHA"), the Family and Medical Leave Act of 1993 ("FMLA"), the California Family Rights Act ("CFRA"), the California Labor Code and Industrial Welfare Commission Wage Orders, or any other federal, state or local laws, regulations or ordinances, and any claim for severance pay, bonus, sick leave, holiday pay, vacation pay, life insurance, health or medical insurance or any other fringe benefit, or disability, and every type of relief (legal, equitable and otherwise) available to Executive, from the beginning of time to the date Executive signs this Agreement.

B. The foregoing release does not extend to Executive's right to receive (i) any vested rights or benefits under the terms of any "employee benefit plan," as defined in Section 3(3) of ERISA or any Western Digital nonqualified deferred compensation plan; (ii) Executive's vested rights, if any, under any stock option grant or stock award pursuant to the terms of such grant agreement or applicable equity award plan; (iii) indemnification under California Labor Code § 2802 California Corporations Code §317, Western Digital's by-laws, any indemnification agreement between Western Digital and Executive, or any other federal or state statute, law, regulation or provision that confers upon Executive a right to defense or indemnification arising out of the services he performed for Western Digital or any of the Releasees; (iv) the payments and benefits set forth in this Agreement; or (v) any other rights or claims under applicable federal, state or local law that cannot be waived or released by private agreement as a matter of law. Executive understands that nothing in the release shall preclude Executive from filing a claim for unemployment or workers compensation insurance. Executive further understands that nothing in this Release or Agreement, including the provisions addressing General Release by Executive, Litigation and Investigation Cooperation, and/or confidentiality obligations, is intended to or shall limit, prevent, impede or interfere with Executive's participation in government investigations, testifying in proceedings brought by a government agency regarding the Company's past or future conduct, or voluntarily communicating, without prior notice to or approval by the Company, with the government (including, but not limited to, government agencies such as the Securities and Exchange Commission, Equal Employment Opportunity Commission, and the National Labor Relations Board) about a potential violation of law or regulation. Notwithstanding the above, unless otherwise prohibited by law, by signing this Agreement, Executive expressly acknowledges and agrees to release and waive any right to claim or recover, and will not accept, any form of monetary or other damages or any other form of relief from Western Digital in connection with any charge, complaint, or lawsuit filed by Executive or by anyone else on Executive's behalf, for any released claims.

C. This general release applies to claims or rights that Executive may possess either individually or as a class member, and Executive waives and releases any right to participate in or receive money or benefits from any class action settlement or judgment after the date this Agreement is signed that relates in any way to Executive's employment with Western Digital.

D. This general release is binding on Executive's heirs, family members, dependents, beneficiaries, executors, administrators, successors and assigns.

E. The obligations stated in this general release are intended as full and complete satisfaction of any and all claims the Executive has now or has had in the past. By signing this general release, Executive specifically represents that Executive has made reasonable effort to become fully apprised of the nature and consequences of this general release, and that Executive understands that if any facts with respect to any matter covered by this release are found to be different from the facts Executive now believes to be true, Executive accepts and assumes that risk and agrees that this general release shall be effective notwithstanding such differences. Executive expressly agrees that this release shall extend and apply to all unknown, unsuspected and unanticipated injuries and damages.

F. Executive represents and warrants that neither Medicare nor Medicaid has made any payment for medical services or items pursuant to 42 U.S.C. § 1395y and the corresponding regulations, or otherwise, relating to the Released Matter. "Released Matter" means any released accident, occurrence, injury, illness, disease, loss, claim, demand, damages, or matter that is subject to this Agreement and the releases herein. Executive acknowledges and agrees that neither Western Digital nor any of the Released Parties has any obligation or responsibility to reimburse Medicare, Medicaid, the Centers for Medicare and Medicaid Services, or any other entity or person for any past or future injury related medical expenses that have arisen or may hereafter arise out or relate in any way to the Released Matters. Executive acknowledges and agrees that it is Executive's responsibility alone to reimburse such entities for any payments made on their behalf for such past or future medical expenses, if any, and Executive agrees to indemnify and hold harmless Western Digital and the Released Parties from any and all claims, demands, liens, subrogated interests and/or causes of action of any nature or character that have been or may in the future be asserted by Medicare and/or Medicaid and/or persons acting on behalf of Medicare and/or Medicaid concerning medical, hospital, or other expenses arising of the Released Matters, or concerning any claim based on inaccurate or inadequate information provided by Executive concerning Executive's status as a Medicare or Medicaid beneficiary.

G. Executive promises not to pursue any claim that Executive has settled by this release. If Executive breaks this promise, Executive agrees to pay all of Western Digital's costs and expenses (including reasonable attorneys' fees) related to the defense of any claims. Executive understands that nothing in this Agreement shall be deemed to preclude Executive from challenging the knowing and voluntary nature of this release before a court or the Equal Employment Opportunity Commission ("EEOC"), or from filing a charge with the EEOC, the National Labor Relations Board, or any other federal, state or local agency charged with the enforcement of any employment laws. Executive expressly acknowledges and agrees, however, that, by signing this release, Executive is waiving the right to, and will not accept, any form of monetary or other damages or any other form of relief from Western Digital based on claims asserted in such a charge or complaint.

4. 1542 Waiver. It is Executive's intention in signing this Agreement that the general release of claims should be effective as a bar to each and every claim, demand and cause of action stated above. In furtherance of this intention, Executive hereby expressly waives any and all rights and benefits conferred upon Executive by the provisions of SECTION 1542 OF THE CALIFORNIA CIVIL CODE and expressly consents that this Agreement shall be given full force and effect according to each and all of its express terms and provisions, including those relating to unknown and unsuspected claims, demands and causes of action, if any, as well as those relating to any other claims, demands and causes of action referred to above. SECTION 1542 provides:

> "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR."

Executive acknowledges and understands the significance and consequence of such release and such specific waiver of SECTION 1542

5. Acknowledgements. Executive acknowledges and agrees that Executive has not suffered any on-the-job injury for which Executive has not already filed a claim. Executive has not been retaliated against for reporting any allegations of wrongdoing by Western Digital or its officers, including any allegations of corporate fraud.

6. Waiver of Rights Under Age Discrimination in Employment Act of 1967**.** Executive expressly acknowledges and agrees that, by entering into this General Release, Employee is waiving and releasing any rights or claims that Executive may have arising under the Age Discrimination in Employment Act of 1967 ("ADEA"), as amended, which may have arisen on or before the date of execution of this General Release, and that this waiver and release is knowing and voluntary. Executive also expressly acknowledges and agrees that: (a) In return for this waiver and release, Executive will receive consideration, i.e., something of value, beyond that to which Executive was already entitled before entering into this General Release; (b) Executive is hereby advised in writing by this General Release to consult with an attorney before signing this General Release; (c) When given a copy of this General Release, Executive was informed that Executive had twenty-one (21) days within which to consider it; and (d) Executive was informed that Executive has seven (7) days following Executive's execution of this General Release in which to revoke its execution, and that this General Release will not become effective or enforceable until the revocation period has expired. If Executive revokes the General Release during the seven-day revocation period, this General Release shall become null and void. In the event Executive signs this General Release and returns it to Western Digital in less than the 21-day period identified above, Executive hereby acknowledges that Executive has freely and voluntarily chosen to waive the time period allotted for consideration of this General Release. As explained above, Executive may revoke this General Release in its entirety during the seven (7) days following Executive's execution of it. Any revocation of this General Release must be in writing and received by Western Digital, during the seven-day revocation period. This General Release will become effective and enforceable seven (7) days following execution by Employee, unless Executive revokes it during the seven-day period consistent with the terms of this Section. The parties agree that no change to this General Release, whether material or immaterial, will restart the running of the twenty-one (21) day period. In the event that Executive exercises Executive's right of revocation during the seven-day revocation period, neither Western Digital nor Executive will have any obligations under this General Release. Nothing in this Paragraph prevents or precludes Executive from challenging or seeking a determination in good faith of the validity of this waiver under the ADEA, nor does it impose any condition precedent, penalties or costs from doing so, unless specifically authorized by federal law.

7. Executive is hereby advised (a) to consult with an attorney if Executive desires prior to signing this Agreement, (b) that this Agreement does not waive rights or claims that may arise after it is executed by Executive, and (c) that Executive has twenty-one (21) days in which to consider and accept this Agreement by signing and returning this Agreement to Western Digital. In addition, Executive has a period of seven (7) days following Executive's execution of this Agreement in which Executive may revoke the Agreement. This Agreement will not become effective or enforceable until the seven (7) day revocation period has passed without revocation. If Executive does not advise Western Digital (by communicating such revocation to the Executive Vice President and Chief Legal Officer within such seven (7) day period) of Executive's intent to revoke the Agreement, Executive has waived the right to revoke the Agreement, and it will become effective and enforceable.

8. Denial of Liability. This Agreement does not constitute an admission by Western Digital of any violation of federal, state or local law, ordinance or regulation or of any liability or wrongdoing whatsoever. Neither this Agreement nor anything in this Agreement shall be construed to be or shall be admissible in any proceeding as evidence of liability or wrongdoing by Western Digital. This Agreement may be introduced, however, in any proceeding to enforce the Agreement.

9. Confidentiality. Executive agrees that the terms and conditions of this Agreement shall remain confidential as between the parties and, unless required by law, Executive shall not disclose them to any other person, other than to Executive's legal and financial advisors or members of Executive's immediate family, who shall also be advised of its confidentiality and who shall agree to be bound by this confidentiality agreement. Without limiting the generality of the foregoing, Executive specifically agrees not to disclose information regarding this Agreement to any current or former employee of Western Digital. Executive agrees that disclosure by Executive in violation of the foregoing shall constitute and be treated as a material breach of this Agreement.

10. Confidential and Proprietary Information. Executive acknowledges that by reason of Executive's position with Western Digital, Executive has been given access to confidential, trade secret, proprietary or private materials or information regarding Western Digital's business. Executive represents that Executive has held all such information confidential and will continue to do so, and that Executive will not use such information without the prior written consent of Western Digital. Executive may continue to receive and be entrusted with confidential material through the Separation Date. In addition, Executive agrees that Executive's obligations under the Employee Invention and Confidentiality Agreement, if Executive is subject to one, or any other similar Western Digital or Released Party agreement or policy relating to confidential information, employee inventions, nonsolicitation, noncompetition, or similar matters to which Executive is now subject ("Surviving Agreements") continue in effect per the terms of those agreements. Executive represents that Executive has returned all confidential, proprietary and trade secret information within Executive's possession or control to Western Digital or will make best efforts to do so on or before the Separation Date. Executive understands that confidential trade secrets, proprietary information and confidential business information of Western Digital affects the successful conduct of Western Digital's business and its goodwill. Executive hereby acknowledges that the sale or unauthorized use or disclosure of any confidential, trade secret, proprietary or private materials or information regarding Western Digital's business by any means whatsoever shall constitute "Unfair Competition." Executive agrees that Executive shall not engage in Unfair Competition at any time. Executive also understands that pursuant to the Defend Trade Secrets Act of 2016, 18 USC § 1833(b), Executive shall not be held criminally or civilly liable under any Federal or State Trade secret law for the disclosure of a trade secret that is made (a) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney, for the sole purpose of reporting or investigating a suspected violation of law; or (b) in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal.

11. Return of Company Property. Executive warrants and represents that Executive will return all company equipment, including, but not limited to, keys or means of access to Western Digital's facilities or parking structures, computers, cell phones, personal data assistants, and notebooks within Executive's possession or control, and not previously delivered to Western Digital, on or before Executive's Separation Date. Executive will also return all information, materials, documents, memoranda, reports, files, samples, books, correspondence, lists, programs, documentation, and/or other related materials produced as a result of Executive's employment with Western Digital (including copies) within Executive's possession or control, and not previously delivered to Western Digital, no later than Executive's Separation Date. Executive shall be entitled to retain information about his contacts and shall be permitted to download information for such contacts (e.g., name, address, telephone number, email address, etc.) prior to the Separation Date.

12. Non-Solicitation. During my employment with the Company and for a period of one (1) year following the voluntary or involuntary termination of my employment for any reason, I shall not (whether on my own or in active concert with anyone else) directly or indirectly solicit or attempt to solicit (1) any person from the Company with whom I worked or about whom I learned confidential information in my employment with the Company, whether such person is an employee, a consultant, or an independent contractor, to terminate their employment or engagement with the Company or to become employed by me or any third party; or (2) any customer of the Company in a manner involving the use of information which is not legally in the public domain and which is confidential to the Company. I acknowledge and agree that the foregoing covenants are reasonable and necessary to protect the Company's trade secrets and stable workforce. The foregoing shall not prevent or restrict employment or engagement of any person as a result of an unsolicited response of such person to a generally circulated offer of an employment or engagement opportunity.

13. Litigation and Investigation Cooperation. Executive agrees to cooperate with Western Digital regarding any threatened, pending or subsequently filed litigation, claims, or other disputes, or in any investigation or proceeding by any governmental agency or body, involving Western Digital that relate to matters within Executive's knowledge or responsibility during Executive's employment with Western Digital. Executive has disclosed to Western Digital's General Counsel all information within Executive's knowledge as of the date of this Agreement related to any pending or threated legal matter with which Executive has had any direct or indirect involvement. Furthermore, Executive agrees to cooperate in the prosecution of any claims and lawsuits brought by Western Digital that are currently outstanding or that may in the future be brought relating to matters which occurred during or prior to the term of Executive's employment with Western Digital. Without limiting the foregoing, Executive agrees (a) to meet with Western Digital representatives, its counsel, or other designees at mutually convenient times and places with respect to any items with the scope of this provision; (b) to provide truthful testimony regarding same to any court, agency, or other adjudicatory body; and (c) to provide Western Digital with notice of contact by any adverse party or such adverse party's representative, except as may be required by law. Western Digital will reimburse Executive for all reasonable expenses in connection with the assistance and cooperation described in this paragraph.

14. Intellectual Property Assistance. Executive agrees to execute every lawful document that Western Digital requests him to execute (whether or not during Executive's employment with Western Digital) in connection with the protection of Western Digital's intellectual property rights. Such lawful documents include, but are not limited to, declarations and assignments including declarations of inventorship for filing and prosecuting patent applications on inventions, assignments to show title to such inventions and patent applications in Western Digital or Western Digital's designee, and assignments to show title to works of authorship and applications for copyright registration. Executive agrees that Executive shall give such further assistance, including but not limited to information and testimony pursuant to Western Digital's request (whether or not after Executive's Separation Date) in connection with its defense, assertion, or protection of Western Digital's intellectual property rights. Western Digital shall reimburse Executive for all reasonable out of pocket expenses incurred in providing assistance pursuant to this provision.

15. Non-Disparagement. Executive agrees that Executive shall not (a) directly or indirectly, make or ratify any statement, public or private, oral or written, to any person that disparages, either professionally or personally, Western Digital, as well as its directors, officers, and employees, past and present, and each of them, in each such case in his or her capacity as a service provider to Western Digital, or (b) make any statement or engage in any conduct that has the purpose of materially disrupting the business of Western Digital. Western Digital agrees that it shall direct its current Board of Directors (for such time as they remain on the Board of Directors) its current Executive Officers

(so long as they remain employees of Western Digital) its current public spokesperson (for such time as he remains an employee of Western Digital to not directly or indirectly, make or ratify any statement, public or private, oral or written, to any person that disparages, either professionally or personally, Executive. In the event Western Digital receives inquiries from potential employers regarding Executive, Western Digital will provide only Executive's dates of employment, position history, and compensation. Executive agrees that Executive will direct all reference inquiries to HR department (HR Central at 866-823-8775). Nothing herein shall in any way prohibit Executive or Western Digital from disclosing such information as may be required by law, or by judicial or administrative process or order or the rules of any securities exchange or similar self-regulatory organization applicable to Executive or Western Digital.

16. Repayment Provision Upon Re-employment. Executive agrees to repay Western Digital a pro rata portion of the Separation Benefits paid to Executive under Section 2.A. of this Agreement if Executive obtains re-employment with Western Digital, including any of its related entities, within the period of time after execution of the Agreement as set forth in Section 2 for which Western Digital contemplates paying Executive Separation Benefits. For example, if Executive is paid two weeks of Separation Benefits, but is reemployed by Western Digital one week after Executive's Separation Date, Executive must repay one week of Separation Benefits to Western Digital.

17. Warranty Regarding Non-Assignment. Executive warrants and represents that Executive has not heretofore assigned or transferred to any person not a party to this Agreement any released matter or any part or portion thereof and Executive shall defend, indemnify and hold harmless Western Digital from and against any claim (including the payment of attorneys' fees and costs actually incurred whether or not litigation is commenced) based on or in connection with or arising out of any such assignment or transfer made, purported or claimed.

18. Termination of Relationship. Executive and Western Digital acknowledge that any employment or contractual relationship between them shall terminate on the Separation Date, and that they have no further employment or contractual relationship except as may arise out of this Agreement and Executive's continued obligations under the Surviving Agreements.

19. Warranty Regarding Taxes. Executive agrees that Executive shall be exclusively and fully liable for the payment of any and all federal, state, and local taxes which may be due, and tax consequences, including interest and penalties, if any, as the result of the consideration received as set forth herein. Executive agrees to indemnify Western Digital for, and to hold Western Digital harmless from, any obligation, liability, taxes, penalties, costs or attorney's fees (collectively, the "Tax Liability") it may incur in connection with the failure to withhold any tax, social security, FICA, or any other amounts associated with the above-referenced payment, except to the extent such Tax Liability directly results from Western Digital's negligence in connection with the failure to properly withhold or report any tax, social security, FICA or other amounts associated with the above-referenced payment. Executive has not relied upon any advice from Western Digital as to the taxability of any payments hereunder, whether pursuant to federal, state or local income tax statutes or otherwise. Executive acknowledges that Western Digital does not make and has not made any representations regarding the taxability of the payment to Executive, and Executive has not relied upon any representation or advice by Western Digital on that subject. It is intended that the terms of this Agreement will not result in the imposition of any tax liability pursuant to Section 409A of the Internal Revenue Code of 1986, as amended. This Agreement shall be construed and interpreted consistent with that intent so as to avoid the imputation of any additional tax, penalty or interest under Section 409A of the Internal Revenue Code yet preserve (to the nearest extent possible) the intended benefit payable to the Executive.

20. Severability and Enforceability. If any provision of this Agreement or its application is held invalid, the invalidity shall not affect other provisions or applications of the Agreement which can be given effect without the invalid provision or application and, therefore, the provisions of this Agreement are declared to be severable. The parties agree that a waiver of a breach by the other party shall not operate or be construed as a waiver by that party of any subsequent breach of like or similar kind. No waiver shall be binding unless in writing and signed by the party waiving the breach.

21. Integration Clause. This Agreement, the Surviving Agreements, and the applicable equity award plans and award agreements governing outstanding equity awards (collectively, the "Integrated Agreements") constitute and contain the entire agreement and understanding concerning Executive's employment and the other matters addressed herein. The parties intend the Integrated Agreements to be a complete and exclusive statement of the terms of their agreement. The parties represent and acknowledge that they do not rely and have not relied upon any representation or statement not set forth in this Agreement. The Integrated Agreements supersede and replace all prior negotiations and agreements, proposed or otherwise, whether written or oral, between the parties concerning the subject matters contained herein. This is a fully integrated document. This Agreement may be modified only with a written instrument executed by both parties.

22. Counterparts. This Agreement may be executed in counterparts, and each counterpart, when executed, shall have the efficacy of a signed original. Photographic and facsimile copies of such signed counterparts may be used in lieu of the originals for any purpose.

23. Advice of Counsel. In entering this Agreement, the parties represent that they have had the opportunity to seek the advice of counsel of their choosing prior to executing this Agreement.

24. Attorney's Fees. The parties agree that each side shall bear their own costs and any attorney's fees incurred in connection with this Agreement, other than as may be set forth in Section 2 above. However, should Executive breach any of the provisions or obligations of this Agreement, all of which are deemed material for purposes of this Section 23, Western Digital shall be entitled to recover from Executive the reasonable attorney fees and costs that Western Digital incurs in connection with any legal dispute over Executive's breach of the Agreement.

25. Supplementary Documents. All parties agree to cooperate fully and to execute any and all supplementary documents and to take all additional actions that may be necessary or appropriate to give full force to the basic terms and intent of this Agreement and which are not inconsistent with its terms.

26. Cooperation in Drafting. Executive and Western Digital have cooperated in the drafting and preparation of this Agreement. Hence, in any construction to be made of this Agreement, the same shall not be construed against any party on the basis that the party was the drafter.

27. Headings. The section headings contained in this Agreement are inserted for convenience only and shall not affect in any way the meaning or interpretation of this Agreement.

28. Arbitration and Governing Law. This Agreement is made and entered into in the State of California and shall in all respects be interpreted, enforced and governed under the laws of said State without regard to principles of conflict of laws.

A. Provided that Executive has exhausted the claims and appeals procedure of the Plan with respect to any claim for benefits or for breach of fiduciary duty, any dispute regarding Executive's employment with Western Digital or termination of such employment, and any aspect of this Agreement (including but not limited to the enforceability, unconscionability, interpretation, construction, or breach of this Agreement), shall be governed by the Western Digital Dispute Resolution Agreement, in the event an enforceable one exists between Executive and Western Digital.

B. In the event that an enforceable Western Digital Dispute Resolution Agreement between Executive and Western Digital does not exist, and provided that Executive has exhausted the claims and appeals procedure previously mentioned in this paragraph with respect to any claims for benefits or for breach of fiduciary duty, the following shall apply: Any dispute regarding Executive's employment with Western Digital or its termination, and any aspect of this Agreement (including but not limited to the enforceability, unconscionability, interpretation, construction, or breach of this Agreement, except as expressly provided otherwise herein) shall be settled by final and binding arbitration before a single arbitrator in the county in which Executive worked in accordance with the JAMS Employment Arbitration Rules and Procedures ("Rules") as the exclusive remedy for such dispute, and judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. A copy of the Rules can be found at: http://www.jamsadr.com/rules-employment-arbitration. The arbitration proceedings do not provide for jury trials, but for a hearing before one independent, neutral arbitrator. Therefore, in agreeing to arbitrate claims, both Executive and Western Digital and its affiliates are waiving a trial or hearing before a jury. Any claim shall be brought in the parties' individual capacity, and not as a plaintiff or class member in any purported or actual class or collective action proceeding, and accordingly Executive waives all purported and actual class and collective action claims, unless applicable law prohibits such waiver, which itself, notwithstanding the foregoing, shall be a question for a court of competent jurisdiction to resolve. In the event of (1) a California Private Attorney General Action claim; (2) a purported or actual class or collective action claim determined to be non-waivable pursuant to applicable law; or (3) any claim determined to be non-arbitrable pursuant to applicable law, such claim(s) shall be brought as a civil action and the parties shall seek such civil action to be stayed pending resolution of all arbitrable claims in arbitration.

C. This arbitration provision shall be viewed as a post-employment agreement, with both Executive and Western Digital splitting equally any fees of the arbitrator and JAMS.

29. Injunctive Relief. Either party may apply to the arbitrator for preliminary injunctive relief until the arbitration award is rendered or the controversy is otherwise resolved. Either party also may, without waiving any remedy under this paragraph, seek from any court having jurisdiction any interim or provisional relief that is necessary to protect the rights of that party, pending the establishment of the arbitral tribunal.

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IN WITNESS WHEREOF, the undersigned have read and understand the consequences of this Agreement and voluntarily sign it. The undersigned declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

EXECUTED this 15th day of June 2019.

"EXECUTIVE"

Print Name: Mark P. Long

Signature: /s/ Mark P. Long

EXECUTED this 17th day of June 2019.

"WESTERN DIGITAL"

Print Name: Lori Sundberg

Title: EVP and Chief Human Resources Officer

Signature: /s/ Lori Sundberg

CERTAIN CONFIDENTIAL PORTIONS HAVE BEEN REDACTED FROM THIS EXHIBIT BECAUSE THEY ARE BOTH (i) NOT MATERIAL AND (ii) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED. INFORMATION THAT HAS BEEN OMITTED HAD BEEN IDENTIFIED IN THIS DOCUMENT WITH A PLACEHOLDER IDENTIFIED BY THE MARK "[***]".

Exhibit 10.21

K1 FACILITY AGREEMENT

This K1 FACILITY AGREEMENT (this "Agreement") is made as of May 15, 2019, by and among Toshiba Memory Corporation, a Japanese corporation ("TMC"), Toshiba Memory Iwate Corporation, a Japanese corporation ("TMI" and together with TMC, "Toshiba Memory"), Western Digital Corporation, a Delaware corporation ("WD") (together with TMC, the "Parent Parties"), SanDisk LLC, a Delaware limited liability company ("SanDisk LLC"), SanDisk (Cayman) Limited, a company organized under the laws of the Cayman Islands ("SanDisk Cayman"), SanDisk (Ireland) Limited, a company organized under the laws of the Republic of Ireland ("SanDisk Ireland"), SanDisk Flash B.V., a company organized under the laws of The Netherlands ("SanDisk Flash," and collectively with SanDisk LLC, SanDisk Cayman and SanDisk Ireland, "SanDisk"), Flash Partners, Ltd., a Japanese *tokurei yugen kaisha* ("FPL"), Flash Alliance, Ltd., a Japanese *tokurei yugen kaisha* ("FAL"), and Flash Forward, Ltd., a Japanese *godo kaisha* ("FFL," and collectively with Toshiba Memory, WD, SanDisk, FPL and FAL, the "Parties").

WHEREAS, FPL, FAL and FFL (collectively, with any future joint venture operations mutually agreed between TMC and WD, the "JVs" and, each, a "JV") are engaged in the manufacture of NAND Flash Memory Products and BiCS Products;

WHEREAS, Toshiba Memory plans to build and facilitize the K1 Facility located within the Kitakami Facility (each as defined in Exhibit A) for use in establishing production capacity for BiCS Products via K1 Capacity Transfers (as defined below), including by making investments to transfer tools from the Yokkaichi Facility to the K1 Facility and in new tools in connection therewith, among other potential uses pursuant to this Agreement;

WHEREAS, TMC intends to conduct certain activities at the Kitakami Facility through TMI, TMC's wholly owned Subsidiary;

WHEREAS, Toshiba Memory, WD, SanDisk and the JVs are concurrently herewith entering into the FFL Second Commitment and Extension Agreement (the "FFL Second Extension Agreement") to, among other things, extend FFL's term to December 31, 2034;

WHEREAS, in reliance on the extension of FFL's term as described in the foregoing recital, the Parties intend for FFL to be the Parent Parties' primary vehicle for joint investments in tools for the manufacture of BiCS Products at the K1 Facility that FFL will acquire in accordance with a production framework substantially similar to the production framework established in the New Y2 Agreement;

WHEREAS, the Parties desire to set forth the terms and conditions of the construction and use of the K1 Facility; and

WHEREAS, some or all of the Parties, among others, are concurrently entering into this Agreement, the FFL Second Extension Agreement, the Amended JMD Agreement, the Amendment to WD-TMC PCLA, the K1 MCEIA, the Amended FFL Services Agreement and the Amended SanDisk Services Agreement (each as defined in Exhibit A) (collectively, the "New Agreements").

NOW, THEREFORE, the Parties hereby agree as follows:

1. FRAMEWORK

1.1 New Y2 Production Framework. The Parties acknowledge and agree that the terms and conditions set forth in Article 1 of the New Y2 Agreement apply to the manufacture of BiCS Products in the K1 Facility (including, for the avoidance of doubt, with respect to the transfer of BiCS Process Technology (as defined in the New Y2 Agreement), process integration for manufacture of BiCS Products, and the rights of the Parent Parties to market and sell BiCS Products) to the same extent that they would apply if the K1 Facility were the New Y2 Facility and part of the Yokkaichi Facility; provided, however, to the extent any provision of Article 1 of the New Y2 Agreement expressly conflicts with any provision in this Agreement, the provision in this Agreement shall control as to such conflict.

1.2 Other Activities. The phrase "Yokkaichi Facility or any other fabrication facility" in Section 6.11 of the FPL Master Agreement, Section 6.13 of the FAL Master Agreement, Section 6.13 of the FFL Master Agreement, and Section 1.6 of the New Y2 Agreement is hereby replaced with the phrase "Yokkaichi Facility, Kitakami Facility, or any other fabrication facility."

1.3 FFL as Primary Investment Vehicle. FFL shall be the Parent Parties' primary vehicle for joint investments in tools for the Kitakami Facility [***].

1.4 Former JV Capacity.

(a) Notwithstanding anything to the contrary set forth in the Master Operative Documents, but subject to the Ramp Down Provisions, each Parent Party and SanDisk shall have the right, subject to the terms and conditions of this Section 1.4, to use (directly or indirectly through its wholly owned Subsidiaries) for any purpose (other than [***]), including the production of NAND Flash Memory Products and BiCS Products, in each case, that are not [***]: (i) any capacity of a JV of which such Parent Party or SanDisk, as the case may be, has acquired all of the Units, Shares, or Interests (as applicable); or (ii) any capacity acquired by such Parent Party or SanDisk, as the case may be, from a JV as a result of the dissolution procedures under the JV Operating Agreement of such JV, or in connection with the termination of the JV Master Agreement of such JV (collectively, (i) and (ii) constituting "Former JV Capacity"). [***]

(b) [***]

(c) [***]

(d) [***]

(e) [***]

(f) [***]

(g) [***]

(h) [***]

(i) [***]

2. K1 FACILITY AND CONSTRUCTION

2.1 Purpose of K1. The Parties acknowledge and agree that (a) the K1 Facility may be used for the installation of tools in connection with implementing K1 Capacity Transfers and (b) the K1 Facility may also be used by the Parties for (i) BiCS Expansions, the conversion of their then-existing production capacity for NAND Flash Memory Products (including NAND capacity in the JVs and Toshiba Capacity) into production capacity for BiCS Products ("BiCS Conversion"), and transitions of their then-existing production capacity for a given BiCS Product to production capacity for another technology node of such BiCS Product ("BiCS Technology Transitions"), (ii) the manufacture of other products (including supporting capacity expansions and technology transitions of such other products) and (iii) the development of new technologies or products, in each case of (ii) and (iii), as mutually agreed between the Parent Parties from time to time. [***]

2.2 First JV Wafer Out. The Parties target K1 Facility cleanroom readiness to occur in [***] with respect to wafer capacity from the implementation of the K1 Minimum Commitment, with a First JV Wafer Out Date targeted [***].

2.3 Rights and Responsibilities in Construction.

(a) Toshiba Memory. Toshiba Memory shall (i) direct the design, construction and facilitization of the K1 Facility and (ii) exercise commercially reasonable efforts to ensure that the K1 Facility is (A) insurable, (B) designed and constructed to mutually acceptable high levels of risk control standards and (C) completed on a schedule consistent with achieving the First JV Wafer Out Date provided for in Section 2.2. Toshiba Memory shall maintain the K1 Facility at mutually acceptable high levels of risk control standards in accordance with current practice.

(b) WD. In connection with the construction and facilitization of the K1 Facility, (i) WD shall (and the Parent Parties shall cause the JVs to) assist Toshiba Memory in minimizing the time required to obtain required administrative approvals, and (ii) WD and its agents shall have (with prior coordination with Toshiba Memory and the construction coordinators for the K1 Facility) reasonable access to the K1 Facility construction site and to all appropriate information pertaining to the construction of the K1 Facility and necessary for WD to participate in the JV operations in the K1 Facility; provided, that WD shall be solely responsible for all damage caused by such access.

2.4 Phases of Construction. The shell of the K1 Facility shall be built in one (1) phase, and the cleanroom shall be built in four (4) phases of substantially similar size. [***]

2.5 Construction Costs and Related Costs.

(a) Building Depreciation Prepayment. Prior to each Payment Due Date set forth in Schedule 2.5(a)(i) or if such Payment Due Date is not a Business Day, the Business Day immediately preceding such Payment Due Date [***] WD and TMI shall pay to FFL the Payment Amount set forth for such Payment Due Date in Schedule 2.5(a)(i) (each, a "Building Depreciation Prepayment") [***]

(b) Start-Up Costs. The Parties acknowledge that one or more of the Parties have incurred or will incur actual costs in connection with constructing the K1 Facility and preparing the K1 Facility for production during the period prior to the start of volume production at the K1 Facility, including personnel costs, materials costs and other operating expenses, for which each Parent Party has the obligation ultimately to bear 50% ("Start-Up Costs"). The Parent Parties shall discuss in good faith and agree upon the Start-Up Costs borne by the Parties and the means and timing by which each Party, as applicable, shall be reimbursed or credited for having incurred more than 50% of the Start-Up Costs or shall make payments due for having incurred less than 50% of the Start-Up Costs; provided, that the determination and allocation of Start-Up Costs and the means and timing of reimbursement shall be in a manner substantially similar to that utilized in connection with the start-up costs of the Yokkaichi Facility. [***] Start-Up Costs will be excluded from K1 Manufacturing Costs.

(c) Land Costs. [***]

2.6 Incentives. [***]

2.7 Insurance. Toshiba Memory shall maintain or arrange property insurance covering the JV assets in the K1 Facility and business interruption insurance in respect of the business conducted at the K1 Facility, the scope and amounts of which shall be consistent with existing practices at the Yokkaichi Facility and as required by any lender or carrier to secure such coverage. This coverage shall provide basically full replacement value of all JV equipment installed in the K1 Facility, subject to valuation as part of Toshiba Memory's annual insurance policy renewal, and shall name the applicable JV as a beneficiary in respect of assets owned or leased by it and K1 employee expenses covered by business interruption insurance. On an annual basis, or when requested by either Party, the K1 Operating Committee shall discuss and review the current insurance coverage and/or the need for any additional property or business interruption insurance in respect of the JV assets in and operations of the K1 Facility. Further, WD reserves the right to seek to arrange additional property or business interruption insurance for its own account in respect of such assets or operations, and Toshiba Memory shall cooperate in good faith to provide such information and access as is reasonably necessary for WD to arrange such insurance. If Toshiba Memory makes a recovery from a third party (other than an insurer per the above) in respect of both assets in the K1 Facility and other assets, then Toshiba Memory shall allocate to the applicable JVs a share of the net amount of such recovery in proportion to the losses suffered by such JVs and total losses suffered by such JVs and Toshiba Memory.

3. PRODUCTS; RIGHTS TO CLEANROOM SPACE; TOOLS

3.1 BiCS Products.

(a) Subject to Section 1.3, the JVs may produce BiCS Products at the K1 Facility.

(b) BiCS Products manufactured at the Kitakami Facility and that are identified [***] as K1 lots are referred to as "K1 BiCS Products." "JV K1 BiCS Products" are K1 BiCS Products allocated to a JV under the applicable JV's JV Master Agreement. "K1 Unilateral BiCS Products" are K1 BiCS Products allocated to [***]

(c) For the avoidance of doubt, [***]

3.2 Rights to Cleanroom Space.

(a) K1 JV Space. The JVs shall have the right to invest in and secure production capacity and/or cleanroom space in the K1 Facility as follows:

(i) K1 JV BiCS Space. Subject to Section 1.3, the Parties acknowledge that each of the JVs has the right to invest in and secure production capacity and/or cleanroom space in the K1 Facility for the production of JV BiCS Products (the cleanroom space actually so utilized for production of BiCS Products at any time, such JV's "K1 JV BiCS Space"). In the event of an expiration or dissolution of a JV or termination of a JV Master Agreement for any reason, without any limitation on TMC's use or disposal of the facilities or assets of such JV, each Parent Party shall consider in good faith potential negative impacts on the remaining JVs' respective production capacities in the K1 Facility and utilization of their respective K1 JV BiCS Space.

(ii) K1 JMD Space. [***]

(b) K1 Non-JV Space. The Parent Parties have the right to invest in and secure production capacity and/or cleanroom space as follows:

(i) [***]

(ii) Unilateral Space. [***]

3.3 Tool Acquisition, Usage and Layout.

(a) JV Tools. Acquisitions of JV BiCS Tools shall be made in accordance with the terms for NAND Flash Memory Products tool acquisitions in the applicable JV Master Agreement, and JV BiCS Tools may be installed in the K1 Facility as mutually agreed by the Parent Parties. [***]

(b) JMD Tools. [***]

(c) Toshiba R&D Tools. [***]

(d) Unilateral Tools. [***]

(e) Tool Layout. [***]

3.4 NAND Flash Memory Products. Notwithstanding anything to the contrary in this Agreement, but subject to Section 1.3, the Parties acknowledge that NAND Flash Memory Products may be manufactured using tools installed in the K1 Facility cleanroom space if and to the extent agreed in a JV Business Plan or by the applicable JV Operating Committee. Any such manufacture of NAND Flash Memory Products (including as to expansion or technology transition) shall be conducted pursuant to the terms of the applicable JV's JV Agreements as if such JV Agreements contemplated the manufacture of NAND Flash Memory Products in the K1 Facility. Any NAND Flash Memory Products manufactured at the Kitakami Facility and that are [***] as K1 lots are referred to as "K1 NAND Flash Memory Products." "JV K1 NAND Flash Memory Products" are K1 NAND Flash Memory Products allocated to a JV under the applicable JV's JV Master Agreement. Allocation of monthly lot output of NAND Flash Memory Products under the JV Master Agreements is hereby amended to include the following: the actual monthly lot output of K1 NAND Flash Memory Products will be allocated between the Parent Parties in the manner set forth in this Agreement as if all of such output were BiCS Product output from the K1 Facility; provided, that during any month in which the planned production of NAND Flash Memory Products is [***] output will be allocated between the Parent Parties [***]

4. RAMP-UP PROCESS

4.1 K1 Minimum Commitment.

(a) Unless otherwise agreed in writing between the Parent Parties, the Parent Parties shall, through FFL, make the investments necessary for [***] L/M in aggregate FFL production capacity using the K1 Facility for BiCS Products [***], which investment shall be divided equally between the Parent Parties (the foregoing, as further described below, the "K1 Minimum Commitment").

(b) [***]

(c) [***]

(d) [***]

4.2 Existing Facility BiCS Expansion. [***]

4.3 Other Facility Expansions. [***]

4.4 BiCS Conversions and BiCS Technology Transitions. Without limiting TMC's implementation of BiCS Conversions or BiCS Technology Transitions as part of the Phase I Implementation, the JVs shall be given priority for any BiCS Conversion or BiCS Technology Transition. Should any of FPL, FAL or FFL not accept any proposal for a BiCS Conversion or BiCS Technology Transition, the non-rejecting Parent Party may implement such BiCS Conversion or BiCS Technology Transition on its capacity, and [***]. Subject to the foregoing priority granted to the JVs, nothing in this Agreement shall in any way limit TMC's ability to implement BiCS Conversions or BiCS Technology Transitions within the Toshiba Capacity, which shall be made in TMC's sole discretion. For the avoidance of doubt, any BiCS Conversion or BiCS Technology Transition involving the use of the New Y2 Facility, the Y6 Facility or the K1 Facility shall be managed as a technology transition by the Operating Committees in accordance with the JV Agreements and past practices at the Yokkaichi Facility.

4.5 Failure to Invest.

(a) K1 Minimum Commitment. If WD fails for any reason to make (or authorize the JVs to make) the investment necessary to implement its 50% share of the K1 Minimum Commitment [***], then [***]

(b) Ramp-Up Commitment. If a Parent Party fails for any reason to make (or authorize the JVs to make) the investment necessary to implement its [***] of a Ramp-Up Commitment, then the other Parent Party (so long as it has made and authorized the investment necessary to implement its 50% share of the K1 Minimum Commitment) may, [***]

(c) [***]

4.6 Prior Agreement. Sections 4.2, 4.3 and 4.4 hereof supersede and replace Sections 4.2, 4.3 and 4.4 of the Y6 Agreement, respectively, from the date hereof.

4.7 Adjustment Payment. Solely with respect to the K1 Facility, [***] if either Parent Party's Threshold Capacity Ratio falls below [***] for [***], then [***] will pay [***] an Adjustment Payment [***] For the avoidance of doubt, other than the Adjustment Payment, the cost per unit of the same product and same technology node shall be the same for both Toshiba Memory, on the one hand, and WD and SanDisk, on the other hand. The term "Adjustment Payment" shall mean [***]

4.8 [***] and K1 Capacity Transfers.

(a) [***] Proposals [***].

(b) [***]

(c) K1 Capacity Transfer Proposal [***].

(d) [***]

(e) [***]

(f) [***]

(g) [***]

5. BiCS PRODUCTS PRIORITY

5.1 [***]

5.2 [***]

5.3 JV Manufacturing Source. Notwithstanding anything to the contrary in this Agreement or any other Master Operative Document, the Yokkaichi Facility and the Kitakami Facility shall be the JVs' exclusive manufacturing sources for output of BiCS Products, except upon mutual agreement by the Parent Parties.

5.4 Prior Agreement. This Article 5 supersedes and replaces Article 5 of the Y6 Agreement from the date hereof. The references to "Section 5.1(a)," "Section 5.1(b)," "Section 5.1(a)(iv)," and "Section 5.1(b)(v)" in Section 5.2 of the New Y2 Agreement shall refer to Section 5.1, Section 5.2, Section 5.1(b)(ii) and Section 5.2(b)(ii), respectively, of this Agreement.

6. K1 OPERATING COMMITTEE

6.1 Committee Purpose and Authority. There will be an Operating Committee for K1 Facility operations (the "K1 Operating Committee") consisting of a senior executive designated by each of WD and TMC (each such individual, the "WD Representative" and the "TMC Representative," respectively), each of whom shall have an engineering background and represent the designating Party on a day-to-day basis at the K1 Facility. The K1 Operating Committee shall work together and endeavor to make the K1 Facility the most advanced and competitive memory fabrication facility in the world. The K1 Operating Committee will have the authority to determine all JV-related matters concerning the day-to-day operations of the K1 Facility (including staffing matters as provided in Article 7), subject to the requirements of this Agreement and consistent with past practice at the Yokkaichi Facility.

6.2 Parent Party Representatives.

(a) Replacement. Each Parent Party shall notify the other Parent Party in advance of any replacement of its representative on the K1 Operating Committee. If a Parent Party requests in good faith that the other Parent Party's representative be replaced with another person from the other Parent Party's organization, the other Party shall consider and discuss in good faith with the requesting Parent Party such request, provided, that such replacement, if any, may be determined solely by such other Parent Party.

(b) [***]

6.3 Committee Meetings. The K1 Operating Committee shall communicate on a day-to-day basis with respect to the status of K1 Facility operations and any other issues that may arise and shall meet in person no less than one time per week, or such other times and frequency as mutually agreed by all members of such committee. The K1 Operating Committee shall hold a monthly review meeting in English at the Yokkaichi Facility, the K1 Facility or other location (as mutually agreed between the K1 Operating Committee members) on [***] of each calendar month, unless otherwise agreed by the K1 Operating Committee. The K1 Operating Committee shall prepare and distribute to the Parent Parties (at least three Business Days in advance of the K1 Operating Committee's monthly review meetings) monthly reports in English with respect to the engineering activities, operations and cost information of the K1 Facility.

6.4 Dispute Resolution. If the members of the K1 Operating Committee are unable to agree on any issue after [***] (by agreement of its two members), they shall submit such matter together with their respective recommendations to the applicable Board of Directors or Board of Executive Officers of the applicable JV(s), which shall endeavor to immediately resolve the issue or escalate such issue, as applicable in the manner set forth in the applicable JV Master Agreement.

7. ENGINEERS AND HEADCOUNT PLAN

7.1 K1 JV Engineers; Personnel. As used in this Agreement:

(a) "K1 JV Engineers" means [***];

(b) "TMC Personnel" means [***];

(c) "WD Personnel" means [***];

(d) "Personnel" means [***]; and

(e) "WD Team" means [***].

7.2 K1 JV Headcount Plan. [***]

7.3 Staffing. [***]

7.4 Integration; Headcount Working Group. Integration of the WD Team into the K1 Facility organization, organization structure, updates on the hiring of K1 JV Engineers by WD or TMC (or their respective Affiliates), access to the K1 Operating Committee, WD Team member communications with WD, [***] and related matters will be discussed by the Headcount Working Group (as defined in the FFL Master Agreement), as applicable, and, subject to and without any limitation on the effect of the Information Security Agreement as applicable, provided for and resolved in the manner set forth in the FFL Master Agreement with respect to personnel at the Y5 Facility, except that matters to be handled by the Y5 Operating Committee will be handled instead by the K1 Operating Committee.

7.5 WD Team. With respect to the WD Team, subject to and without any limitation on the effect of the Information Security Agreement, the Parties agree as follows:

(a) Language Skills. Recognizing that Japanese language skills will be necessary for personnel working at the K1 Facility, WD shall seek to minimize the number of K1 JV Engineers seconded by WD or any of its Affiliates to the K1 Facility who are not highly proficient in Japanese, and WD shall ensure that those members of the WD Team who are not Japanese speakers receive some language training in Japanese at WD's cost before being sent to work at the K1 Facility and WD shall use commercially reasonable efforts to ensure that such language training is appropriate to such WD Team member's position at the K1 Facility.

(b) Reimbursement; Conditions. WD's and its Affiliates' K1 JV Engineers shall be integrated by TMC at the Kitakami Facility and shall work together with TMC's and its Affiliates' K1 JV Engineers to seek to ensure the optimal operation of the K1 Facility from a cost and technology perspective. [***]

(c) WD Personnel. [***]

(d) [***]

(e) [***]

(f) [***]

(g) Employment Relationship. All members of the WD Team will remain employees of WD (or the WD Affiliate, as applicable).

7.6 Indemnification. Each Parent Party will indemnify the other Parties from any claim by any of such Parent Party's or its Affiliate's employees, consultants or agents (such Parent Party being the "Employer") (a) based on other than willful misconduct of such Employer or its Affiliate, its or its Affiliate's employees, consultants or agents or (b) that he or she has rights, or is owed obligations, as an employee of the Party that is not the Employer or its Affiliate.

7.7 Other Personnel. [***]

8. MANUFACTURING COSTS

8.1 K1 Manufacturing Costs. "K1 Manufacturing Costs" [***]

(a) [***]

(b) [***]

(c) [***]

(d) Manufacturing Cost Reconciliation. Within [***] after the end of each JV fiscal quarter, TMC shall perform the manufacturing cost reconciliations of [***] Charges and [***] Charges, in each case as described above (together, the "Quarterly Manufacturing Cost Reconciliation"). TMC personnel at the K1 Facility shall provide a forecast of the Quarterly Manufacturing Cost Reconciliation to the JVs and WD every month.

8.2 K1 Manufacturing Cost Allocation Framework. K1 Manufacturing Costs shall be shared by the Parties and shall be either K1 Fixed Manufacturing Costs or K1 Variable Manufacturing Costs, in each case as determined in the manner set forth in this Article 8. [***]

8.3 K1 Manufacturing Cost Allocation Methodology.

(a) [***]

(b) K1 Manufacturing Costs allocated to K1 Products will be further allocated as set forth in Section 8.4(b).

(c) Within [***] after the end of each JV fiscal quarter, TMC shall provide to WD a reconciliation of the allocation of K1 Manufacturing Costs that reflects [***] during the fiscal quarter. TMC personnel at the K1 Facility will provide a forecast of such quarterly reconciliation to the JVs and WD every month.

(d) In the event that there is [***] warrant a deviation from the allocation methodology set forth in Sections 8.3(a) through 8.3(c), then the Parent Parties shall [***]

8.4 K1 Product Manufacturing Costs.

(a) "K1 Product Manufacturing Costs" means [***]

(b) All K1 Product Manufacturing Costs will be either K1 Product Fixed Manufacturing Costs or K1 Product Variable Manufacturing Costs.

(i) K1 Product Fixed Manufacturing Costs. "K1 Product Fixed Manufacturing Costs" means [***]

(ii) K1 Product Variable Manufacturing Costs. "K1 Product Variable Manufacturing Costs" means [***]

8.5 Accounting and Cost Methodology. K1 Manufacturing Costs methodology will in principle be in accordance with the existing accounting and cost methodology used by the JVs in the Yokkaichi Facility. [***]

8.6 No Duplication of Costs or Expenses. It is the intent of the Parties that any payments made by the Parties under or pursuant to any Master Operative Document shall not be duplicative and that the Parties shall in no event be required to pay or contribute more than once for any service, product or development work provided under the Master Operative Documents, if such service, product or development work is provided under more than one Master Operative Document. In addition, to the extent that a Party makes a direct payment for any service, product or development work under a Master Operative Document, the cost incurred by TMC (from the Kitakami Facility) or the JVs, as the case may be, in connection with the provision of such service, product or development work shall not be included in the applicable wafer price charged to such Party.

8.7 Masks and Probe Cards. For masks and probe cards for the K1 Facility related to jointly manufactured products, the applicable JV shall be solely responsible for the purchase of any masks and probe cards for JV Capacity at the K1 Facility, consistent with current practice at the Yokkaichi Facility. Toshiba Memory shall be solely responsible for the purchase of any masks and probe cards for Toshiba Capacity at the K1 Facility, consistent with current practice at the Yokkaichi Facility. Each Party (as between Toshiba Memory, on the one hand, and WD and SanDisk, on the other hand) shall be solely responsible for the purchase of any masks and probe cards for the K1 Facility related to its own proprietary products, consistent with current practice at the Yokkaichi Facility.

9. FOUNDRY AND PURCHASE AND SUPPLY ARRANGEMENTS

9.1 K1 Foundry Arrangements.

(a) Die Sort, Equipment and Raw Materials. Die sorting facilities for JV K1 Products will be located at [***] or such other place mutually agreed by the Parent Parties. Toshiba Memory's use of any of FPL's, FAL's and FFL's manufacturing equipment located in the K1 Facility in the manufacture of BiCS Products will be governed by the FPL Lease Agreement, the FAL Lease Agreement and the FFL Lease

Agreement, respectively. Toshiba Memory shall be responsible for obtaining the raw materials and services to be used in the manufacture of JV K1 Products.

(b) Foundry Production. Toshiba Memory shall manufacture BiCS Products at the K1 Facility for the JVs as ordered by the JVs pursuant to the Foundry Agreements. Toshiba Memory and the JVs shall use their best efforts to achieve the manufacturing capacity for the K1 Facility set forth in the JV Business Plans, which will include any plans for JV use of cleanroom space in the K1 Facility. Wafers produced in the K1 Facility will be sorted between the Parent Parties such that aggregate yield losses will be shared on an equal basis.

(c) Operating Relationship. The Parent Parties shall provide personnel necessary for the manufacture of BiCS Products for and on behalf of the JVs as described in Article 7.

(d) Consideration to be Paid to Toshiba Memory. Toshiba Memory shall be compensated by the JVs as provided in the Foundry Agreements, [***]

(e) K1 Purchase Orders. POs (as defined in each Foundry Agreement) for JV K1 Products shall be issued by each JV to [***] (as instructed by TMC in writing from time to time, provided, that TMC will provide WD with written notice of any change to the issuing party [***]

9.2 Purchase and Supply Agreements. For the avoidance of doubt, the rights, obligations and procedures for the purchase by the Parent Parties from FPL, FAL and FFL of JV BiCS Products manufactured in whole or in part at the K1 Facility shall be as set forth in the FPL Purchase and Supply Agreements, the FAL Purchase and Supply Agreements and the FFL Purchase and Supply Agreements, respectively, of Toshiba Memory (in the case of Toshiba Memory) and the applicable SanDisk party (in the case of WD). Toshiba Memory may place POs for Products (each as defined in each Purchase and Supply Agreement between TMC and each JV), including JV BiCS Products, pursuant to such Purchase and Supply Agreement.

9.3 Equal Right to JV Production. For the avoidance of doubt, Toshiba Memory, on one hand, and WD and SanDisk, on the other hand, shall have the right and obligation, through the JVs, to utilize 50% of the manufacturing capacity for JV BiCS Products manufactured in whole or in part at the K1 Facility, on an Equivalent Lot basis, as provided in the JV Master Agreements.

9.4 Forecasts/Production Planning. The Parent Parties shall submit forecasts to the applicable JV(s) for K1 Products, [***] as further provided in the applicable Purchase and Supply Agreement, [***]

9.5 K1 Product Output Allocation. The actual monthly lot output of K1 Products shall be allocated among the JVs, Toshiba Memory and WD, as applicable, based on the K1 Capacity Ratio; provided, that during any month in which the planned production capacity of K1 Products is [***], Toshiba Memory and WD will be allocated output of such K1 Products [***]

9.6 Alternative Use of Allocated Capacity. For the avoidance of doubt, any alternative use of a Party's allotted manufacturing capacity for JV BiCS Products within the K1 Facility will be as permitted in, and subject to and governed by the terms of, the applicable JV's JV Master Agreement.

10. RESEARCH AND DEVELOPMENT

10.1 [***]

10.2 [***]

10.3 [***]

10.4 [***]

10.5 No Change to Common R&D. Except as set forth in this Article 10, or as may be otherwise agreed in writing between the Parties, the Common R&D Agreement shall continue in full force and effect in accordance with its terms, and the agreements regarding equipment, materials and development provided for in the Common R&D Agreement shall continue to be part of the Common R&D Agreement.

11. K1 INFORMATION AND DATA SHARING

11.1 Management and Operating Reports. Upon the request of either TMC or WD, the K1 Operating Committee shall provide TMC and WD with, simultaneously in Japanese and English, those management and operating reports identified on Schedule 11.1 and as mutually agreed upon from time to time by the Parent Parties. Upon reasonable request from WD, Toshiba Memory employees shall explain such reports to employees of WD and its Subsidiaries and respond to questions from employees of WD and its Subsidiaries; provided, however, that WD acknowledges and agrees that Toshiba Memory will not be responsible for WD's or any of its Subsidiaries' failure to understand any such reports. The K1 Operating Committee and the Y5 Operating Committee (as defined in the FFL Master Agreement) will cooperate to obtain any information relating to K1 Facility management or operations necessary for the reports to be provided by the Y5 Operating Committee under Section 8.1(d) of the FFL Master Agreement.

11.2 Production Control; Access to K1 Data. From the start of production of JV Products in the K1 Facility, Toshiba Memory shall provide, consistent with past practice, employees of WD and its Subsidiaries [***]; provided, that the cost necessary for making such system available to such employees will be borne by [***]. Each Party will be provided the same real-time access to K1 data relating to JV Products.

11.3 Engineering Wafers. Each of the Parent Parties will have full access to all operational and engineering data and reports related to engineering wafers manufactured for JV Products manufactured at the K1 Facility.

11.4 Unilateral Capacity Data. For any Toshiba Capacity in the K1 Facility, Toshiba Memory shall provide to the JVs all data necessary to determine whether the Toshiba Capacity is being operated [***], including but not limited to [***].

11.5 [***]

12. OTHER MODIFICATIONS TO CERTAIN MASTER OPERATIVE DOCUMENTS

To update their agreement as expressed in certain of the Master Operative Documents to, among other things, take into account the K1 Facility, to provide for the installation of tools and utilization of clean room space by each of the JVs within the K1 Facility and to provide for TMI's performance of certain activities at the K1 Facility, the Parties agree that the Master Operative Documents are hereby amended as set forth below, and as necessary to give effect to the purpose and intent of this Article 12 whether or not expressly set forth below.

12.1 JV Master Agreements.

(a) External Manufacturing Source. For the avoidance of doubt, the K1 Facility is not an "external manufacturing source," as such term is used in the JV Master Agreements.

(b) Embedded NAND Products. The rights of each Parent Party under the JV Agreements to use a portion of its total allocated capacity in the JV Space (as defined in the Y6 Agreement) to cause to be manufactured Embedded NAND Products, subject to the conditions and limitations set forth in the JV Agreements, are hereby extended to the K1 JV Space.

(c) Proprietary Flash Products. The rights of each Parent Party under the JV Agreements to use a portion of its total allocated capacity in the Y3 Facility, the Y4 Facility and from the JV Space (as defined in the Y6 Agreement) in the Y5 Facility, the New Y2 Facility and the Y6 Facility to cause to be manufactured Proprietary Flash Products, subject to the conditions and limitations set forth in the JV Agreements, are hereby extended to the K1 JV Space, and TMC's rights to cause to be manufactured Proprietary Flash Products, subject to the conditions and limitations set forth in the JV Agreements, are hereby extended to TMI. Each of WD (together with SanDisk) and Toshiba Memory may use a portion of its total allocated capacity from the K1 JV Space to cause to be manufactured Proprietary Flash Products, subject to each of the limitations, conditions and Parent Party undertakings in respect of Proprietary Flash Products provided under the applicable JV Master Agreement, as amended by the New Y2 Agreement and the Y6 Agreement, for the manufacture of Proprietary Flash Products in the Yokkaichi Facility. If a Parent Party requests a modification to the limitations, conditions and undertakings for the manufacture of Proprietary Flash Products, the Parent Parties will discuss such requested modification.

(d) Engineering Wafers. The rights of the Parent Parties to receive Evaluation Wafers and Qualification Wafers (each as defined in the JV Master Agreements) under the JV Master Agreements apply to Evaluation Wafers and Qualification Wafers manufactured in the K1 Facility, and TMC's rights to receive Evaluation Wafers and Qualification Wafers under the JV Agreements are hereby extended to TMI. For the avoidance of doubt, WD may ship its share of Evaluation Wafers and Qualification Wafers to any location in its sole discretion subject to any terms and conditions of the Master Operative Documents that relate or apply to the shipment of Evaluation Wafers or Qualification Wafers by SanDisk, including applicable export control requirements; provided, that any such shipment by WD shall comply with applicable shipping procedures at the Yokkaichi Facility consistent with past practice with reasonable adjustments based on attributes specific to the K1 Facility or as otherwise required due to the K1 Facility's being situated at the Kitakami Facility, and not at the Yokkaichi Facility.

(e) Financing. The terms and conditions with respect to the financing necessary to enable committed or agreed capacity expansions or other investment in any JV for JV Capacity at the K1 Facility shall be as follows: (i) in the case of FFL, as set forth in Section 6.12 of the FFL Master Agreement as if such investment were in the Y5 Facility; (ii) in the case of FAL, as set forth in Section 6.12 of the FAL Master Agreement as if such investment were in the Y4 Facility; and (iii) in the case of FPL, as set forth in Section 6.10 of the FPL Master Agreement as if such investment were in the Y3 Facility.

(f) Y3, Y4, Y5, New Y2, Y6 and K1 Capacity Ratios. The capacity ratios used to calculate output and cost allocation for the Y3 Facility, the Y4 Facility, the Y5 Facility, the New Y2 Facility and the Y6 Facility as set forth in Schedule 12.2(d) to the New Y2 Facility Agreement and Schedule 12.1(c) to the Y6 Facility Agreement are hereby replaced with the capacity ratios initially set forth on Schedule 12.1(f) to this Agreement and updated from time to time by the Parent Parties as mutually agreed.

(g) [***]

(h) Ramp Down; Termination Capacity. For the avoidance of doubt, with respect to the obligations of the Parent Parties under (i) Sections 8.1(d)(i) and 8.1(e)(i) of the FAL Master Agreement, (ii) Sections 8.1(d)(i) and 8.1(e)(i) of the FPL Master Agreement and (iii) Section 9.1(d)(i) of the FFL Master Agreement to continue to manufacture NAND Flash Memory Products and BiCS Products in the event of a termination of such JV Master Agreement under the circumstances described therein, the Termination Capacity for NAND Flash Memory Products and the Termination Capacity for BiCS Products shall take into account the Requesting Party's (as defined in the applicable JV Master Agreement) NAND Flash Memory Products capacity allocation and BiCS Products capacity allocation, respectively, available from the applicable JV in the K1 Facility.

(i) License Grant and Know-How Access at Termination. Any reference to "the Yokkaichi Facility" in:

(i) Sections 9.1(c)(ii), 9.1(d)(iv), 9.1(g)(ii), 9.1(h)(i) and 9.1(i)(i) of the FFL Master Agreement is hereby amended to refer to "the Yokkaichi Facility and the Kitakami Facility";

(ii) Sections 8.1(c)(ii), 8.1(d)(iv), 8.1(g)(ii), 8.1(h)(i) and 8.1(i)(i) of the FPL Master Agreement is hereby amended to refer to "the Yokkaichi Facility and [***]; and

(iii) Sections 8.1(c)(ii), 8.1(d)(iv), 8.1(g)(ii), 8.1(h)(i) and 8.1(i)(i) of the FAL Master Agreement is hereby amended to refer to "the Yokkaichi Facility and [***]

12.2 JV Operating Agreements.

(a) Management and Operating Reports. The management and operating reports identified on Schedule 5.3 to each JV Operating Agreement will take into account any utilization by FPL, FAL and FFL, as applicable, of the K1 JV Space.

(b) Capital Reductions. If necessary, the Board of Directors or Board of Executive Officers, as applicable, of the JVs shall consider capital reductions to the extent that any such capital reduction will not adversely affect the Yokkaichi Facility's or the Kitakami Facility's operations. This Section 12.2(b) supersedes and replaces the last sentence of Section 6.2(b) of each JV Operating Agreement from the date hereof.

12.3 JV Foundry Agreements.

(a) TMI hereby is added as a party to each of the Foundry Agreements and fully bound by, and subject to, all of the covenants, conditions and agreements thereunder that are required to be performed, observed or satisfied by TMC with respect to the K1 Facility, and may exercise all of TMC's rights thereunder, in each case, as though an original party thereto in the same manner and to the same extent as if TMI were TMC itself.

(b) The reference to JV Y5 NAND Flash Memory Products in Article 5 of the FFL Foundry Agreement is hereby revised to include JV K1 BiCS Products manufactured for FFL.

(c) Subject to Section 1.3, purchases from Toshiba Memory by:

(i) FPL of JV K1 BiCS Products manufactured for FPL shall be made in accordance with the terms of the FPL Foundry Agreement for purchases of Products (as defined therein), provided, that the purchase prices and manufacturing costs for JV K1 BiCS Products manufactured for FPL shall be calculated and allocated in accordance with Article 8 hereof;

(ii) FAL of JV K1 BiCS Products manufactured for FAL shall be made in accordance with the terms of the FAL Foundry Agreement for purchases of Products (as defined therein), provided, that the purchase prices and manufacturing costs for JV K1 BiCS Products manufactured for FAL shall be calculated and allocated in accordance with Article 8 hereof; and

(iii) FFL of JV K1 BiCS Products manufactured for FFL shall be made in accordance with the terms of the FFL Foundry Agreement for purchases of Products (as defined therein), provided, that the purchase prices and manufacturing costs for JV K1 BiCS Products manufactured for FFL shall be calculated and allocated in accordance with Article 8 hereof.

(d) [***]

(e) The definition of "Kitakami Facility" set forth herein is hereby incorporated by reference into each Foundry Agreement. The references to "Yokkaichi Facility" in:

(i) Articles 2 and 3 of each of the Foundry Agreements are hereby replaced with "the Yokkaichi Facility or the Kitakami Facility, as applicable";

(ii) Article 6 of the FFL Foundry Agreement are hereby replaced with "Yokkaichi Facility or Kitakami Facility (as set forth in the applicable PO)";

(iii) Section 10(b)(i) of the FPL Foundry Agreement and Section 11(b)(i) of each of the FAL Foundry Agreement and FFL Foundry Agreement are hereby replaced with "the facility from which the products were shipped by Toshiba;" and

(iv) Section I of Exhibit A to each of the Foundry Agreements are hereby replaced with "Yokkaichi Facility and the Kitakami Facility."

(f) [***]

(g) Delivery of Products (as defined in the FPL Foundry Agreement and FAL Foundry Agreement) pursuant to the FPL Foundry Agreement and FAL Foundry Agreement shall be made [***].

(h) [***]

12.4 JV Purchase and Supply Agreements.

(a) TMI hereby is added as a party to each of the Purchase and Supply Agreements to which TMC is a party and fully bound by, and subject to, all of the covenants, conditions and agreements thereunder that are required to be performed, observed or satisfied by TMC with respect to the K1 Facility, and may exercise all of TMC's rights thereunder, in each case, as though an original party thereto in the same manner and to the same extent as if TMI were TMC itself.

(b) The capitalized term “Products” in the FFL Purchase and Supply Agreements is hereby revised to include JV K1 BiCS Products manufactured for FFL in accordance with the Purchase Specification as thereinafter defined.

(c) Subject to Section 1.3, purchases by Toshiba Memory or WD from:

(i) FPL of JV K1 BiCS Products manufactured for FPL shall be made in accordance with the terms of TMC’s (in the case of Toshiba Memory) and SanDisk Cayman’s (in the case of WD, as if WD were SanDisk Cayman) FPL Purchase and Supply Agreement for purchases of Products (as defined therein), provided, that with respect to such purchases of JV K1 BiCS Products manufactured for FPL, any price or charge that is calculated or determined under Article 4 (“Purchase Prices of Products; Title Transfer”) of the FPL Purchase and Supply Agreement based on Article 4 of the FPL Foundry Agreement shall instead be based on Article 8 hereof;

(ii) FAL of JV K1 BiCS Products manufactured for FAL shall be made in accordance with the terms of TMC’s (in the case of Toshiba Memory) and SanDisk Ireland’s (in the case of WD, as if WD were SanDisk Ireland) FAL Purchase and Supply Agreement for purchases of Products (as defined therein), provided, that with respect to such purchases of JV K1 BiCS Products manufactured for FAL, any price or charge that is calculated or determined under Article 4 (“Purchase Prices of Products; Title Transfer”) of the FAL Purchase and Supply Agreement based on Article 4 of the FAL Foundry Agreement shall instead be based on Article 8 hereof; and

(iii) FFL of JV K1 BiCS Products manufactured for FFL shall be made in accordance with the terms of TMC’s (in the case of Toshiba Memory) and SanDisk Flash’s (in the case of WD, as if WD were SanDisk Flash) FFL Purchase and Supply Agreement for purchases of Products (as defined therein) provided, that with respect to such purchases of JV K1 BiCS Products manufactured for FFL, any price or charge that is calculated or determined under Article 4 (“Purchase Prices of Products; Title Transfer”) of the FFL Purchase and Supply Agreement based on Article 4 of the FFL Foundry Agreement shall instead be based on Article 8 hereof.

(d) [***]

(e) [***]

(f) Delivery of Products (as defined in the FPL Purchase and Supply Agreements and FAL Purchase and Supply Agreements Agreement) pursuant to the FPL Purchase and Supply Agreements and FAL Purchase and Supply Agreements shall be made [***].

(g) [***]

12.5 JV Lease Agreements.

(a) All references to Y3 NAND Flash Memory Products in the FPL Lease Agreement are hereby revised to include JV K1 BiCS Products manufactured for FPL. All references to Y4 NAND Flash Memory Products in the FAL Lease Agreement are hereby revised to include JV K1 BiCS Products manufactured for FAL. All references to Y5 NAND Flash Memory Products, JV Y5 BiCS Products, JV New Y2 BiCS Products or JV Y6 BiCS Products in the FFL Lease Agreement are hereby revised to include JV K1 BiCS Products manufactured for FFL.

(b) [***]

(c) The definition of "Kitakami Facility" set forth herein is hereby incorporated by reference into each JV Lease Agreement.

(d) [***]

(e) [***]

(f) [***]

12.6 Information Security Agreement. From the date hereof, the Kitakami Facility shall constitute a "Toshiba Facility" for purposes of the Information Security Agreement.

12.7 Undertaking. From the date hereof, the New Agreements shall each constitute an "Underlying Agreement" for purposes of the Undertaking.

12.8 Settlement Agreement. From the date hereof, the New Agreements shall each constitute a "Collaboration Agreement" for purposes of the Settlement Agreement.

12.9 ISCO Supplement. From the date hereof, this Agreement shall constitute a "Core Agreement" for purposes of the ISCO Supplement.

13. CONFIDENTIALITY AND DISCLOSURE

13.1 Public Announcements. Neither Parent Party shall, nor shall it permit any of its Affiliates to, without the prior written consent of the other Parent Party:

(a) issue any public release, announcement or other document, or otherwise publicly disclose any information or make any public statement, concerning the operations of the K1 Facility that refers to the other Parent Party or any of its Affiliates in connection therewith (other than a general reference to affiliation with the JVs) and (i) concerns the financial condition or results of operations of the JVs, other than as required by any applicable Law or accounting standard with respect to the financial disclosure obligations of either Parent Party, or (ii) (A) disparages either Parent Party or the JVs' performance or (B) reflects negatively on either Parent Party's commitment to the K1 Facility; or

(b) publicly file all or any part of any New Agreement or any description thereof, or issue or otherwise make publicly available any press release, announcement or other document that contains Confidential Information belonging to the other Parent Party (or its Affiliates) or the JVs, except as may be required by applicable Law (in which case such Parent Party shall (or shall cause the Person required to make such filing to) cooperate with the other Parent Party, to the extent reasonable and practicable, in obtaining any confidential treatment for such filing requested by the other Parent Party).

(c) Each Parent Party shall use commercially reasonable efforts to grant or deny any approval required under this Section 13.1 within five Business Days of receipt of written request by the other Parent Party; provided, however, that a Parent Party's failure to respond within said time period shall not be deemed to constitute such Parent Party's approval or consent.

13.2 Non-Disclosure Obligations.

(a) For a period of [***] from the date of receipt of each item of Confidential Information disclosed by one Party (the "Disclosing Party") under this Agreement or the K1 MCEIA, the other Party (the "Receiving Party") shall safeguard such item of Confidential Information, shall keep it in confidence, and shall use reasonable efforts, consistent with those used in the protection of its own confidential information, to prevent its disclosure of such Confidential Information to third parties.

(b) Notwithstanding the foregoing Section 13.2(a), the Receiving Party shall not be obligated by this Section 13.2 with respect to information that: (i) is already known to the Receiving Party at the time of its receipt from the Disclosing Party as reasonably evidenced by its written records; (ii) is or becomes publicly available without breach of this Agreement by the Receiving Party; (iii) is made available to a third party by the Disclosing Party without restriction on disclosure; (iv) is rightfully received by the Receiving Party from a third party without restriction and without breach of this Agreement; (v) is independently developed by the Receiving Party as reasonably evidenced by its written records contemporaneous with such development; (vi) is disclosed with the prior written consent of the Disclosing Party, provided, that each recipient from the Receiving Party shall execute a confidentiality agreement prohibiting further disclosure of the Confidential Information, under terms no less restrictive that those provided in this Agreement; (vii) is required to be disclosed by the order of a Governmental Authority, provided, that the Receiving Party shall give the Disclosing Party prompt notice of such request so that the Disclosing Party has an opportunity to defend, limit or protect such disclosure; or (viii) is required to be disclosed by applicable securities or other Laws, provided, that the Receiving Party shall, prior to any such disclosure required by the applicable Governmental Authority, provide the Disclosing Party with notice which includes a copy of the proposed disclosure and consider in good faith the Disclosing Party's timely input with respect to such disclosure.

(c) The Receiving Party shall use its reasonable best efforts to limit dissemination of the Disclosing Party's Confidential Information to such of its employees who have a need to know such information for the purpose for which such information was disclosed. The Receiving Party understands that disclosure or dissemination of the Disclosing Party's Confidential Information not expressly authorized hereunder would cause irreparable injury to the Receiving Party, for which monetary damages would not be an adequate remedy and would entitle the Disclosing Party to equitable relief in addition to any remedies the Disclosing Party may have hereunder or at law.

(d) For purposes of the confidentiality obligations in the Existing Agreements and the New Agreements, information shall not be considered to have been made available to a third party by the Disclosing Party without restriction on disclosure if such information was only made available to such third party as a result of an inadvertent or unintentional disclosure of such information by the Disclosing Party. In the event that the Disclosing Party's disclosure of Confidential Information to the Receiving Party is inadvertent or unintended and the Disclosing Party, upon becoming aware of such inadvertent or unintended disclosure, promptly notifies the Receiving Party in writing that such disclosure was inadvertent or unintended, the Receiving Party shall promptly (and in any event in less than [***] destroy all such Confidential Information. In addition, if the Receiving Party reasonably believes that the Disclosing Party's disclosure of Confidential

Information to the Receiving Party was inadvertent or unintended, the Receiving Party shall promptly notify the Disclosing Party of such belief and, if requested by the Disclosing Party, promptly (and in any event in less than [***] destroy all such Confidential Information. If requested by the Disclosing Party, the Receiving Party shall certify in writing that all such Confidential Information has been destroyed.

(e) Nothing in this Agreement shall be construed as granting or conferring any rights, licenses or relationships by the transmission of the Confidential Information.

13.3 Ownership and Return of Information. All Confidential Information disclosed hereunder shall remain the property of the Disclosing Party. Upon request by the Disclosing Party, the Receiving Party shall return all Confidential Information of the Disclosing Party, including any and all copies thereof, or certify in writing that all such Confidential Information had been destroyed.

14. TERM AND TERMINATION

14.1 Term. This Agreement shall continue in full force and effect until the latest of the termination of (a) the FPL Master Agreement (if [***]), (b) the FAL Master Agreement (if [***]), and (c) the FFL Master Agreement, unless earlier terminated as hereinafter provided. The term of this Agreement may be extended by mutual agreement of both Parent Parties.

14.2 Termination. Notwithstanding the foregoing Section 14.1, this Agreement may be terminated:

(a) by the mutual written agreement of the Parties, in which case this Agreement will terminate on the date mutually agreed by the Parties;

(b) by either Parent Party upon [***] written notice to the other Parent Party, if (i) (A) the other Parent Party has failed to make (or authorize the JVs to make) the investment necessary to implement its share of the K1 Minimum Commitment [***] or (B) has failed to pay [***], and (ii) TMC (in the case of termination by TMC), or WD or SanDisk (in the case of termination by WD) is not in material breach of any material Master Operative Document; or

(c) by either Parent Party, upon written notice to the other Parent Party, if the other Parent Party (i) makes an assignment of all or substantially all its assets for the benefit of creditors, (ii) has filed a voluntary petition in bankruptcy or insolvency or any other legal action or document seeking reorganization, readjustment or arrangement of its business under any Law relating to bankruptcy or insolvency, or (iii) is adjudicated to be bankrupt or insolvent under any such Law, or has a receiver appointed over all or substantially all of its property, by a competent Governmental Authority; in which case of (i), (ii) or (iii), this Agreement will terminate on the 30th day after such notice of termination is given.

14.3 Termination for Material Breach. The Parent Parties agree and acknowledge that in the event of a final determination by an arbitral tribunal under Section 16.4 that a Parent Party has committed or is committing a continuing material breach of any of Sections [***] of this Agreement or Sections [***] of the New Y2 Agreement (by TMC, in the case of TMC, or by SanDisk, in the case of WD) that [***] (any such breach, a "Material Breach"), and the breaching Parent Party fails to cure such breach within [***] after such determination, then the non-breaching Parent Party shall have as a remedy for Material Breach the termination of this Agreement, in addition to all other legal and equitable remedies available to such Parent Party. In the event that a Parent Party expressly asserts in writing a Material Breach, the dispute shall proceed as specified in Section 16.4, provided, however, that:

(a) no matters other than the existence of such Material Breach (and counterclaims and defenses directly related to the conduct or circumstances underlying the asserted Material Breach) shall be submitted to or determined by the arbitral tribunal;

(b) the Parent Parties shall use their respective reasonable best efforts to complete and finalize the Terms of Reference within [***] following such assertion of Material Breach; and

(c) the Parent Parties shall instruct the arbitral tribunal, with the full assistance and cooperation of the Parent Parties, to endeavor to submit its draft award on the existence of the Material Breach to the Court of Arbitration of the International Chamber of Commerce for approval within [***] following the effective date of the Terms of Reference, provided, that any failure to issue an award in such time period shall not be considered a defense or objection to the enforcement of such an award.

The Parent Parties agree to attempt in good faith to resolve any potential claim for Material Breach. Notwithstanding anything to the contrary in the New Y2 Agreement or the Y6 Agreement, the Parent Parties and SanDisk acknowledge and agree that in the event of a final determination by an arbitral tribunal in accordance with this Section 14.3 that a Parent Party has committed or is committing a continuing material breach of [***] of this Agreement that would reasonably be expected to cause material damage to the JVs or the non-breaching Parent Party, such breach shall be deemed a "Material Breach" of the New Y2 Agreement (by SanDisk, in the case of such a material breach of this Agreement by WD) and the Y6 Agreement and, if the breaching Parent Party fails to cure such breach within [***] after such determination, the non-breaching Parent Party shall have the right to immediately exercise the remedies set forth in

Section 14.3 of the New Y2 Agreement and Section 15.3 of the Y6 Agreement without the necessity for further arbitration.

14.4 Termination in Good Faith. Termination of any Master Operative Document by any party thereto may be done only in good faith.

14.5 Survival.

(a) The provisions of Sections 4.5(c), 7.6, and 12.1(h), Article 13 (except Section 13.1(a)(ii)(B)), this Article 14, Article 16 and Exhibit A shall survive any termination or expiration of this Agreement.

(b) So long as (and only for so long as) the Parent Parties have BiCS Products manufacturing capacity in the JVs, the provisions of Sections 3.2 (except with respect to the K1 Facility), 3.3(d), 4.2 (except with respect to the K1 Facility), 4.3 (except with respect to the K1 Facility), 4.4 (except with respect to the K1 Facility), Article 5 (except with respect to the K1 Facility), Sections 10.3 (except with respect to the K1 Facility) and 10.5, and Article 15 shall also survive any termination or expiration of this Agreement.

(c) Section 1.4 shall survive any termination or expiration of this Agreement until the expiration or termination of the last-to-expire or last-to-terminate of the JV Master Agreements.

14.6 Effect on Other Collaborations. Unless otherwise expressly provided herein, termination of this Agreement shall not affect any surviving rights or obligations set forth in the Joint Operative Documents. For the avoidance of doubt, the BiCS LDA and the WD-TMC PCLA (in each case, including the licenses provided thereunder) shall be unaffected by the termination of this Agreement, and the BiCS LDA and the WD-TMC PCLA shall terminate or expire in accordance with each of such agreement's terms.

15. REPRESENTATIONS AND WARRANTIES

Each Parent Party hereby represents and warrants to the other Parent Party as follows:

15.1 Organization and Standing. It is duly organized and validly existing and, where applicable, in good standing under the laws of the jurisdiction in which it is organized.

15.2 Authority; Enforceability. It has the requisite power and authority to enter into the New Agreements, to execute any certificates or other instruments to be executed by it in connection therewith and otherwise carry out the transactions contemplated by the New

Agreements. All proceedings required to be taken by it to authorize the execution, delivery and performance of the New Agreements, and any such certificates and instruments, have been properly taken. This Agreement has been duly and validly executed and delivered by it and constitutes a valid and binding obligation of it, enforceable against it in accordance with its terms except as enforceability may be limited by bankruptcy, insolvency, fraudulent conveyance or similar laws affecting the enforcement of creditors' rights generally or the availability of equitable remedies (regardless of whether enforceability is considered in a proceeding at law or in equity).

15.3 No Conflict. The execution, delivery and performance of the New Agreements and the BiCS LDA by it and its Affiliates do not and will not (a) breach, violate or conflict with any provision of its charter documents as amended to date, or (b) conflict with or violate any Law applicable to it. No consent, approval or authorization of, or filing with, any Governmental Authority, or any other Person, is required to be made or obtained by it in connection with the execution, delivery and performance by it of any New Agreement or the consummation by it of the transactions contemplated thereby.

15.4 Proceedings. Except for any action, claim, investigation or proceeding (i) threatened, asserted, or pending between or among WD and/or any of its Affiliates, on the one hand, and TMC and/or Toshiba, and/or any of its or their Affiliates, on the other hand or (ii) that falls within the scope of any release, waiver, dismissal, or covenant not to sue set forth in the Settlement Agreement, there are no actions, claims, investigations or proceedings pending, or to its knowledge threatened, by or before any Governmental Authority that, if adversely determined, would have a material adverse effect on it or on the conduct of the business of any of the JVs as contemplated in the Master Operative Documents or on its ability to perform any material obligation under any Master Operative Document.

15.5 Litigation; Decrees. Except for any Action threatened, asserted, or pending (i) between or among WD and/or any of its Affiliates, on the one hand, and TMC and/or Toshiba, and/or any of its or their Affiliates, on the other hand or (ii) that falls within the scope of any release, waiver, dismissal, or covenant not to sue set forth in the Settlement Agreement, there are no Actions pending, or, to its knowledge, threatened that (a) are reasonably likely, based on information known to it as of the date hereof, to have a material adverse effect on the conduct of the business of any of the JVs as contemplated by the Master Operative Documents or BiCS LDA or (b) relate to any of the transactions contemplated by the Master Operative Documents or BiCS LDA in a manner which is material to its, any of its Affiliates' or any of the JVs' ability to carry out the transactions contemplated hereby and thereby or which could have a material adverse effect on the conduct of the business of any of the JVs as contemplated in the Master Operative Documents or BiCS LDA. Except for any judgment, order, writ, or decree in connection with any Action (i) between or among WD and/or any of its Affiliates, on the one hand, and TMC and/or Toshiba, and/or any of its or their Affiliates, on the other hand or (ii) that falls within the scope of any release, waiver, dismissal, or covenant not to sue set forth in the Settlement Agreement, there is no judgment, order, writ or decree that substantially restrains its ability to consummate the transactions contemplated by the New Agreements or the BiCS LDA.

15.6 Compliance with Other Instruments. Except (i) as may have been asserted by WD and/or any of its Affiliates, on the one hand, and TMC and/or Toshiba, and/or any of its or their Affiliates, on the other hand or (ii) any default asserted in connection with any Action, claim, investigation or proceeding that falls within the scope of any release, waiver, dismissal, or covenant not to sue set forth in the Settlement Agreement, neither it nor any of its Affiliates that is party to any New Agreement is in default in any material respect in the performance of any material obligation, agreement, instrument or undertaking to which such Person is a party or by which such Person or any of its properties is bound. Except for any obligation, agreement, instrument or undertaking between or among (i) WD and/or any of its Affiliates, (ii) TMC and/or Toshiba, and/or any of its or their Affiliates, and/or (iii) any of the JVs, there is no such obligation, agreement, instrument or undertaking to which it or any of its Affiliates is a party or by which any of its Affiliates or any of its or their properties is bound, in each case that is reasonably likely to have a material adverse effect on the Parties' use of the K1 Facility as contemplated by the New Agreements.

15.7 Patents and Proprietary Rights. To its knowledge, it owns or possesses sufficient legal rights to all patents, utility models, trademarks, service marks, trade names, copyrights, applications for any of the foregoing, mask works, software, trade secrets, licenses, information and proprietary rights and processes (collectively, "Intellectual Property") necessary (a) to carry out its or any of its Affiliates' obligations under the Master Operative Documents and (b) for the conduct of the business of any of the JVs as contemplated in the Master Operative Documents, without any conflict with or infringement of the rights of others, except as will not have a material adverse effect on either (a) or (b) above. Except for any communications (i) between or among WD and/or any of its Affiliates, on the one hand, and TMC and/or Toshiba, and/or any of its or their Affiliates, on the other hand, or (ii) in connection with any Action, claim, investigation or proceeding that falls within the scope of any release, waiver, dismissal, or covenant not to sue set forth in the Settlement Agreement, including any communications referenced in Schedule 2.1 of the Settlement Agreement, it has not received any communications alleging that its Intellectual Property violates, or by its or any of its Affiliates entering into the transactions contemplated by the Master Operative Documents, would violate the Intellectual Property of any other Person or entity, which violation could reasonably be expected to have a material adverse effect on either (a) or (b) above.

15.8 Compliance with Laws. It and each of its Affiliates has complied and is complying in all material respects with all Laws, except where the failure to so comply would not have a material adverse effect on its or any of its Affiliates ability to perform its or their obligations under the Master Operative Documents or on the production of BiCS Products as contemplated by the Master Operative Documents.

15.9 Patent Cross Licenses. [***]

16. MISCELLANEOUS

16.1 Entire Agreement. This Agreement, together with the exhibit(s) and schedules hereto and the other Master Operative Documents, constitute the entire agreement of the Parties to this Agreement with respect to the subject matter hereof and supersedes all prior written and oral agreements and understandings with respect to such subject matter.

16.2 Undertaking as to Affiliate Obligations. Each Parent Party shall cause all covenants, conditions and agreements to be performed, observed or satisfied by any of its Affiliates that are parties to any New Agreement to be fully and faithfully observed, performed and satisfied by such Affiliate, and shall not cause or permit to exist any breach or default of such covenants, conditions or agreements arising from such Affiliate's action or inaction. Nothing in this Section 16.2 shall be construed to create any right in any Person other than the Parties. In the case of an affirmative covenant or other action required of WD or permitted to be taken by WD hereunder or under any other New Agreement, WD may perform or satisfy such affirmative covenant or other action directly or indirectly by causing one or more of its Subsidiaries to fully perform or satisfy such affirmative covenant or other action. Notwithstanding anything to the contrary in any Master Operative Document, if WD consents or agrees to TMC's or any of its Affiliate's taking an action or inaction that is subject to SanDisk's consent or agreement under a Master Operative Document, WD's providing such consent or agreement shall satisfy such requirement for SanDisk's consent.

16.3 Governing Law. This Agreement shall be governed by and construed in accordance with the internal laws of the State of California applicable to agreements made and to be performed entirely within such state without regard to the conflict of laws principles of such state, except where application of Japanese law is mandatory. Each New Agreement shall be governed in accordance with its governing law provision and, in the absence of any such provision, by the first sentence of this Section 16.3.

16.4 Dispute Resolution; Arbitration. Any dispute concerning this Agreement shall be referred to the applicable JV's Management Representatives and handled by them in accordance with the applicable JV Master Agreement. If the Management Representatives cannot resolve such dispute in accordance with the terms of the applicable JV Master Agreement, then such dispute will be settled by binding arbitration in San Francisco, California. The dispute shall be heard by a panel of three arbitrators pursuant to the rules of the International Chamber of Commerce. The awards of such arbitration shall be final and binding upon the parties thereto. Each party will bear its own fees and expenses associated with the arbitration. Filing fees and arbitrator fees charged by the International Chamber of Commerce shall be borne equally by the Parent Parties.

16.5 Remedies.

(a) Except as may otherwise be specifically provided in the New Agreements, the rights and remedies of the parties under this Agreement are cumulative and are not exclusive of any rights or remedies which the parties hereto would otherwise have.

(b) Equitable relief, including the remedies of specific performance and injunction, shall be available with respect to any actual or attempted breach of this Agreement; provided, however, in the absence of exigent circumstances, the Parties shall refrain from commencing any lawsuit or seeking judicial relief in connection with such actual or attempted breach that is contemplated to be addressed by the dispute resolution process set forth in this Agreement until the Parties have attempted to resolve the subject dispute by following said dispute resolution process to its conclusion.

(c) If the due date for any amount required to be paid under any New Agreement is not a Business Day, such amount shall be payable on the next succeeding Business Day; provided, that if payment cannot be made due to the existence of a banking crisis or international payment embargo, such amount may be paid within the following 30 days.

(d) IN THE ABSENCE OF ACTUAL FRAUD, IN NO EVENT SHALL ANY PARTY BE LIABLE TO OR BE REQUIRED TO INDEMNIFY ANY OTHER PARTY OR ANY OF THEIR RESPECTIVE AFFILIATES UNDER THIS AGREEMENT (OR ANY AGREEMENT INTO WHICH THIS PROVISION IS INCORPORATED) FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL OR INDIRECT DAMAGE OF ANY KIND, (INCLUDING WITHOUT LIMITATION LOSS OF PROFIT OR DATA), WHETHER OR NOT ADVISED OF THE POSSIBILITY OF SUCH LOSS.

16.6 Relationship of the Parties. The Parties are independent contractors and no provision of or action pursuant to any New Agreement shall constitute any Party acting as the direct or indirect agent or partner of the other Party for any purpose or in any sense whatsoever. Nothing contained in this Agreement is intended to, or shall be deemed to, create a partnership or fiduciary relationship between WD and TMC for any purpose. No Party shall take a position contrary to this Section 16.6.

16.7 Official Language. The official language of this Agreement is the English language only, which language shall be controlling in all respects, and all versions of this Agreement in any other language shall not be binding on the parties hereto or nor shall such other versions be admissible in any legal proceeding, including arbitration, brought under this Agreement. All communications and notices to be made or given pursuant to this Agreement shall be in the English language.

16.8 No Implied Licenses. All rights not expressly granted hereunder or under other agreements between or among the Parties are hereby retained in their entirety by such Party. Moreover, there are no implied grants or licenses hereunder and the only rights or licenses granted to any Party hereunder are limited to those rights and licenses expressly set forth herein.

16.9 Export Laws. No Party shall export or re-export, directly or indirectly, any technical information disclosed hereunder or direct product thereof to any destination prohibited or restricted by the export control regulations of Japan or the United States, including the U.S. Export Administration Regulations, without the prior authorization from the appropriate Governmental Authorities. No Party shall use technical information supplied by any other Party hereunder for any purpose to develop or manufacture nuclear, chemical, biological weapons or missiles (hereafter “weapons of mass destruction”). No Party shall knowingly sell any products manufactured using any other Party’s technical information to any third party if it knows that the end-user of the products will use them for the development and/or manufacture of the weapons of mass destruction.

16.10 Definitions; Interpretation.

(a) Certain Definitions. Capitalized terms used but not defined in the main body of this Agreement shall have the meanings assigned to them in Exhibit A. Capitalized terms used but not defined in either of the main body of this Agreement or in Exhibit A shall have the meaning ascribed to such terms in the Y6 Agreement or, if not defined therein, in the FFL Master Agreement.

(b) Treatment of Ambiguities. The Parties acknowledge that each Party has participated in the drafting of this Agreement, and that any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be applied in the construction or interpretation of this Agreement.

(c) References; Construction. Unless otherwise indicated herein, with respect to any reference made in this Agreement to a Section, Article, Schedule or Exhibit, such reference shall be to a section or article of, or a schedule or exhibit to, this Agreement. The article and section headings contained in this Agreement and the recitals at the beginning of this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement or any other agreement. Any reference made in this Agreement to a statute or statutory provision shall mean such statute or statutory provision as it has been amended through the date as of which the particular portion of the Agreement is to take effect, or to any successor statute or statutory provision relating to the same subject as the statutory provision so referred to in this Agreement, and to any then applicable rules or regulations promulgated thereunder. Whenever the words "include," "includes" or "including" are used in this Agreement, they shall be deemed, unless the context clearly indicates to the contrary, to be followed by the words "but (is/are) not limited to." The words "herein," "hereof," "hereunder" and words of like import shall refer to this Agreement as a whole (including its Schedules and Exhibits), unless the context clearly indicates to the contrary. Words used herein, regardless of the number and gender specifically used, shall be deemed and construed to include any other number, singular or plural, and any other gender, masculine, feminine or neuter, as the context indicates is appropriate. Any reference made in this Agreement to another Master Operative Document shall be deemed, unless the context clearly indicates to the contrary, to refer to such Master Operative Document as such Master Operative Document may be amended or supplemented from time to time.

(d) Order of Precedence. To the extent that a provision in this Agreement expressly conflicts with another Master Operative Document, then the provisions of this Agreement will control as to such conflict; provided, however, that unless otherwise provided herein, the provisions of the Master Operative Documents remain in effect.

(e) Other Clarifications. Unless the context clearly indicates the contrary, any reference in this Agreement to (i) actions by, or events relating to, TMC and occurring prior to April 1, 2017 shall refer to actions by, or events relating to, Toshiba, and (ii) rights, obligations, or allocations ascribed to WD hereby, but which are set forth in a Master Operative Document to which WD is not a party, shall refer to the corresponding rights, obligations, or allocations of the applicable SanDisk party to such Master Operative Document, as if WD were named *in lieu* of such applicable SanDisk party. For the avoidance of doubt, (A) nothing herein shall be deemed an assignment or transfer to WD of any rights or allocations ascribed to a SanDisk party in any Master

Operative Document and (B) subclause (A) does not alter any rights or obligations of any Party pursuant to the Undertaking.

16.11 Notices and Contact Information. All notices, reports and other communications to be given or made under this Agreement shall be in writing and shall be deemed received (X) if delivered by hand, courier or overnight delivery service, when delivered, or (Y) if delivered by e-mail, the earlier of: (I) when the recipient, by an email sent to the email address for the sending Party stated in this Section 16.11 or by a notice delivered by another method in accordance with this Section 16.11, acknowledges having received that email (provided, however, that an automatic “read receipt” will not constitute acknowledgment of an email for purposes of this Section 16.11(Y)(I)) or (II) when the email is delivered, if followed within two Business Days by delivery of a copy by hand, courier or overnight delivery service, or (Z) if delivered by mail, five days after being mailed by certified or registered mail, return receipt requested, with appropriate postage prepaid, and, in each case, shall be directed to the address of such Party specified below (or at such other address as such Party shall designate by like notice):

(a) If to WD or SanDisk:

Western Digital Corporation
951 SanDisk Drive
Milpitas, CA 95035 USA
Telephone: (408) 801-1000
E-mail: [***]
Attention: Executive Vice President, Silicon Technology

With a copy to:

Western Digital Corporation
5601 Great Oaks Parkway
San Jose, CA 95119
Telephone: (408) 717-6000
E-mail: [***]
Attention: Chief Legal Officer

(b) If to TMC :

Toshiba Memory Corporation
1-21, Shibaura 3-Chome,
Minato-ku, Tokyo 108-0023 Japan
Telephone: [***]
E-mail: [***]
Attention: Executive Vice President
and Chief Operating Officer

With a copy to:
Toshiba Memory Corporation
1-21, Shibaura 3-Chome,
Minato-ku, Tokyo 108-0023 Japan
Telephone: [***]
E-mail: [***]
Attention: Executive Officer, General Manager, Legal Affairs Division

(c) If to TMI :

Toshiba Memory Iwate Corporation
6-6, Kita-kogyodanchi, Kitakami-shi,
Iwate 024-8510 Japan
Telephone: [***]
E-mail: [***]
Attention: President and Chief Executive Officer

With a copy to:
Toshiba Memory Corporation
1-21, Shibaura 3-Chome,
Minato-ku, Tokyo 108-0023 Japan
Telephone: [***]
E-mail: [***]
Attention: Executive Officer, General Manager, Legal Affairs Division

(d) If to any of the JVs, then to each of the addressees at (a) and (b) above.

16.12 Assignment. Except as separately agreed by the Parties in writing, none of the Parties may transfer this Agreement or any of its rights hereunder (except for any transfer to an Affiliate or in connection with a merger, consolidation or sale of all or substantially all the assets or the outstanding securities of such Party, which transfer will not require any consent of the other Parties hereunder) without the prior written consent of the each of the other Parties (which consent may be withheld by each such other Party in such other Party's sole discretion), and any such purported transfer without such consents will be void.

16.13 Amendment and Waiver. This Agreement may not be amended, modified or supplemented except by a written instrument executed by each Party. No waiver of any provision of this Agreement shall be effective unless set forth in a written instrument signed by the Party waiving such provision. No failure or delay by a Party in exercising any right, power or remedy under this Agreement shall operate as a waiver thereof, nor shall any single or partial exercise of the same preclude any further exercise thereof or the exercise of any other right, power or remedy. Without limiting the foregoing, no waiver by a Party of any breach by any other Party of any provision hereof shall be deemed to be a waiver of any subsequent breach of that or any other provision hereof.

16.14 Severability. If a term of any New Agreement or the application of any such term is or becomes illegal, invalid or unenforceable in any respect under any jurisdiction, that will not affect (a) the legality, validity or enforceability in that jurisdiction of any other term of the New Agreements or (b) the legality, validity or enforceability in any other jurisdictions of that or any other term of the New Agreements. To the extent permitted by applicable law, the Parties waive any provision of Law that renders any provision of this Agreement invalid, illegal or unenforceable in any respect. Such term shall be replaced by a mutually acceptable provision, which being valid, legal and enforceable comes closest to the intention of the Parties underlying such illegal, invalid or unenforceable provision.

16.15 Counterparts; Effectiveness. This Agreement may be executed in counterparts, each of which shall be binding as of the date first written above, and all of which shall constitute one and the same instrument. Each such counterpart shall be deemed an original, and it shall not be necessary in making proof of this Agreement to produce or account for more than one such counterpart. The exchange of copies of this Agreement and of signature pages by facsimile transmission, portable document format (.pdf) or other electronic format shall be deemed to be their original signatures for all purposes. This Agreement shall not become effective until one or more counterparts have been executed by each Party and delivered to the other Parties.

16.16 No Admission. Nothing in this Agreement shall constitute or be used as an admission, acquiescence, acknowledgement, or agreement by anyone as to the merit of any claims or defenses, whether or not asserted in any arbitration or other litigation, except to enforce the provisions of this Agreement or any part of any other agreement expressly amended herein. In addition, nothing in this Agreement shall constitute or be used as an admission in any arbitration, litigation, or other proceeding regarding the interpretation of any other agreement.

[The remainder of this page is intentionally left blank.**]**

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives as of the date first written above.

WESTERN DIGITAL CORPORATION

By: /s/ Siva Sivaram
Name: Siva Sivaram
Title: Executive Vice President, Silicon Technology

TOSHIBA MEMORY CORPORATION

By: /s/ Yasuo Naruke
Name: Yasuo Naruke
Title: President and Chief Executive Officer

SANDISK LLC

By: /s/ Siva Sivaram
Name: Siva Sivaram
Title: Chief Executive Officer

TOSHIBA MEMORY IWATE CORPORATION

By: /s/ Akimichi Yonekura
Name: Akimichi Yonekura
Title: President and Chief Executive Officer

SANDISK (CAYMAN) LIMITED

By: /s/ Stephanie Wells
Name: Stephanie Wells
Title: Director

FLASH PARTNERS, LTD.

By: /s/ Shinichi Nitta
Name: Shinichi Nitta
Title: President and Chief Executive Officer

SANDISK (IRELAND) LIMITED

By: /s/ Stephanie Wells
Name: Stephanie Wells
Title: Director

FLASH ALLIANCE, LTD.

By: /s/ Shinichi Nitta
Name: Shinichi Nitta
Title: President and Chief Executive Officer

SANDISK FLASH B.V.

By: /s/ Stephanie Wells
Name: Stephanie Wells
Title: Director

FLASH FORWARD, LTD.

By: /s/ Shinichi Nitta
Name: Shinichi Nitta
Title: President and Chief Executive Officer

[Signature Page to K1 Facility Agreement]

EXHIBIT A

DEFINITIONS

"3D Collaboration Agreement" means the 3D Collaboration Agreement, dated as of June 13, 2008, between SanDisk LLC and TMC.

"3D Memory" has the meaning set forth in the 3D Collaboration Agreement.

"Action" means a lawsuit, arbitration or other legal proceeding pending by or against or affecting a Party or any of its Affiliates or any of their respective properties.

"Adjustment Payment" has the meaning set forth in Section 4.7.

"Affiliate" means, with respect to any specified Person, any other Person that directly or indirectly, through one or more intermediaries, controls, is controlled by or is under common control with, the Person specified, and "control", when used with respect to any Person, means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities or otherwise, and the terms "controlling" and "controlled" have meanings correlative to the foregoing; provided, however, that the term Affiliate (a) when used in relation to any JV or Subsidiary thereof, shall not include the Parent Parties or any Affiliate of either of them, and (b) when used in relation to WD or TMC or their respective Affiliates, shall not include any JV or Subsidiary thereof.

"Agreement" has the meaning set forth in the preamble to this Agreement.

[***]

"Amended FFL Services Agreement" means that certain Amended and Restated Services Agreement, dated as of even date herewith, by and among TMC, TMI and FFL.

"Amended JMD Agreement" means that certain Amended and Restated Joint Memory Development Agreement, dated as of even date herewith, by and between TMC and SanDisk LLC.

"Amended SanDisk Services Agreement" means that certain Amended and Restated SanDisk Services Agreement, dated as of even date herewith, by and among TMC, TMI and SanDisk.

"Amendment to WD-TMC PCLA" means that certain Amendment to Patent Cross License Agreement Between Western Digital Corporation and Toshiba Memory Corporation, dated as of even date herewith, among WD, SanDisk [***] and TMC.

[***]

"BiCS Conversion" has the meaning set forth in Section 2.1.

[***]

"BiCS Expansions" means [***]

"BiCS LDA" means that certain BiCS License & Development Agreement, dated as of March 1, 2011, by and between TMC and SanDisk LLC.

[***]

"BiCS Products" has the meaning set forth for the term "BiCS Memory Products" in the BiCS LDA.

"BiCS Technology" has the meaning set forth in the BiCS LDA.

"BiCS Technology Transitions" has the meaning set forth in Section 2.1.

"Board of Directors" has the meaning set forth in the FPL Operating Agreement or FAL Operating Agreement, as applicable.

"Board of Executive Officers" has the meaning set forth in the FFL Operating Agreement.

"Building Depreciation Prepayment" has the meaning set forth in Section 2.5(a).

"Business Day" means any day (other than a day which is a Saturday, Sunday or legal holiday in the State of California or Japan) on which commercial banks are open for business in the State of California or Tokyo, Japan.

[***]

"Common R&D Agreement" means that certain Fifth Amended and Restated Common R&D and Participation Agreement, by and between TMC and SanDisk LLC, dated as of March 1, 2011.

"Confidential Information" means information disclosed in written, recorded, graphical or other tangible form which is marked as "Confidential", "Proprietary" or in some other manner to indicate its confidential nature, and/or orally or in other intangible form, identified as confidential at the time of disclosure and confirmed as confidential information in writing within thirty (30) days of its initial disclosure.

[***]

[***]

[***]

[***]

"Disclosing Party" has the meaning set forth in Section 13.2(a).

"Employer" has the meaning set forth in Section 7.6.

"Equivalent Lot" means [***]

[***]

"Existing Agreements" means the JV Agreements and the Joint Operative Documents.

"Existing Facility BiCS Expansion" has the meaning set forth in Section 4.2(a).

[***]

[***]

"FAL" has the meaning set forth in the preamble to this Agreement.

"FAL Commitment and Extension Agreement" means the FAL Commitment and Extension Agreement, dated December 12, 2017, by and among TMC, WD, SanDisk LLC and SanDisk Ireland.

"FAL Foundry Agreement" has the meaning set forth for the term "FA Foundry Agreement" in the FAL Master Agreement.

"FAL Lease Agreement" means that certain Equipment Lease Agreement, dated as of July 7, 2006, by and between FAL and TMC.

"FAL Master Agreement" means that certain Flash Alliance Master Agreement, dated as of July 7, 2006, by and among TMC, SanDisk LLC and SanDisk Ireland.

"FAL MCEIA" means that certain Flash Alliance Mutual Contribution and Environmental Indemnification Agreement, dated as of July 7, 2006, by and among TMC, SanDisk LLC and SanDisk Ireland.

"FAL Operating Agreement" means that certain Operating Agreement of Flash Alliance, Ltd. dated as of July 7, 2006 between TMC and SanDisk Ireland.

"FAL Purchase and Supply Agreement" means (i) with respect to TMC, that certain Purchase and Supply Agreement, dated as of July 7, 2006, by and between FAL and TMC, or (ii) with respect to SanDisk Ireland, that certain Purchase and Supply Agreement dated as of July 7, 2006, by and between FAL and SanDisk Ireland.

"FFL" has the meaning set forth in the preamble to this Agreement.

"FFL Commitment and Extension Agreement" means the FFL Commitment and Extension Agreement, dated December 12, 2017, by and among TMC, WD, SanDisk LLC and SanDisk Flash.

"FFL Foundry Agreement" has the meaning set forth for the term "FF Foundry Agreement" in the FFL Master Agreement.

"FFL Lease Agreement" means that certain Equipment Lease Agreement, dated as of October 20, 2015, by and between FFL and TMC.

"FFL Master Agreement" means that certain Flash Forward Master Agreement, dated as of July 13, 2010, by and among TMC, SanDisk LLC and SanDisk Flash.

"FFL MCEIA" means that certain Flash Forward Mutual Contribution and Environmental Indemnification Agreement, dated as of July 13, 2010, by and among TMC, SanDisk LLC and SanDisk Flash.

"FFL Operating Agreement" means that certain Operating Agreement of Flash Forward, Ltd., dated as of March 1, 2011 between TMC and SanDisk Flash.

"FFL Purchase and Supply Agreement" means (i) with respect to TMC, that certain Purchase and Supply Agreement, dated as of March 1, 2011, by and between FFL and TMC, or (ii) with respect to SanDisk Flash, that certain Purchase and Supply Agreement dated as of March 1, 2011, by and between FFL and SanDisk Flash.

"FFL Second Extension Agreement" has the meaning set forth in the recitals.

"First JV Wafer Out Date" means the date on which the first production of wafers utilizing capacity at the K1 Facility resulting from the implementation of the K1 Minimum Commitment for a portion of such production's manufacturing process is completed.

"Former JV Capacity" has the meaning set forth in Section 1.4(a).

"Foundry Agreements" means the FAL Foundry Agreement, FFL Foundry Agreement and FPL Foundry Agreement.

"FPL" has the meaning set forth in the preamble to this Agreement.

"FPL Commitment and Extension Agreement" means that certain FPL Commitment and Extension Agreement, dated as of October 20, 2015, by and between TMC and SanDisk LLC.

"FPL Foundry Agreement" has the meaning set forth for the term "FP Foundry Agreement" in the FPL Master Agreement.

"FPL Lease Agreement" means that certain Equipment Lease Agreement, dated as of September 10, 2004, by and between FPL and TMC.

"FPL Master Agreement" means that certain Flash Partners Master Agreement, dated as of September 10, 2004, by and among TMC, SanDisk LLC and SanDisk Cayman.

"FPL MCEIA" means that certain Mutual Contribution and Environmental Indemnification Agreement, dated as of September 10, 2004, by and among TMC, SanDisk LLC and SanDisk Cayman.

"FPL Operating Agreement" means that certain Operating Agreement of Flash Partners, Ltd. dated as of September 10, 2004 between TMC and SanDisk Cayman.

"FPL Purchase and Supply Agreement" means (i) with respect to TMC, that certain Purchase and Supply Agreement, dated as of September 10, 2004, by and between FPL and TMC, or (ii) with respect to SanDisk Cayman, that certain Purchase and Supply Agreement dated as of September 10, 2004, by and between FPL and SanDisk Cayman.

"Governmental Authority" means any (a) nation, principality, state, commonwealth, province, territory, county, municipality, district or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign or other government; (c) governmental or quasi-governmental authority of any nature (including any governmental division, subdivision, department, agency, bureau, branch, office, commission, council, board, instrumentality, officer, official, representative, organization, unit, body or Person and any court or other tribunal); or (d) individual, Person or body (including any stock exchange) exercising, or entitled to exercise, any executive, legislative, judicial, administrative, regulatory, police, military or taxing authority or power of any nature.

"Information Security Agreement" means that certain Information Security Agreement, dated as of October 20, 2015, by and between TMC and SanDisk LLC.

[***]

"Intellectual Property" has the meaning set forth in Section 15.7.

"ISCO Supplement" means the Supplement to Information Security and Confidentiality Obligations, dated as of December 12, 2018, by and among TMC, WD, SanDisk and the JVs.

"JMD Project" means the joint development project established to cooperate on the development of the pilot line at the Yokkaichi Facility and/or the K1 Facility pursuant to the Amended JMD Agreement.

"Joint Operative Documents" means the Common R&D Agreement, the Product Development Agreement, the 3D Collaboration Agreement, the Amended JMD Agreement, the JVRA, [***], the Information Security Agreement, the BiCS LDA, the Settlement Agreement, the Undertaking, and the WD-TMC PCLA.

[***]

"JV" has the meaning set forth in the Recitals.

"JV Agreements" means the FAL Master Agreement, the FFL Master Agreement, the FPL Master Agreement, the JV Operating Agreements, the Foundry Agreements, the Purchase and Supply Agreements, the JV Lease Agreements, the JV MCEIAs, the FPL Commitment and Extension Agreement, the FAL Commitment and Extension Agreement, the FFL Commitment and Extension Agreement, the New Y2 Agreement, the New Y2 MCEIA, the Y6 Agreement, and the Y6 MCEIA.

"JV BiCS Products" means JV Y3 BiCS Products, JV Y4 BiCS Products, JV Y5 BiCS Products, JV New Y2 BiCS Products, JV Y6 BiCS Products and JV K1 BiCS Products.

"JV BiCS Tools" means tools used in the JV BiCS Space of the New Y2 Facility, the Y3 Facility, the Y4 Facility, the Y5 Facility, the Y6 Facility or the K1 Facility.

"JV Business Plan" has, with respect to a JV, the meaning given to the term "Business Plan" in the respective JV's JV Master Agreement.

"JV Capacity" has the meaning set forth in Section 4.8(a)(i).

"JV K1 BiCS Products" has the meaning set forth in Section 3.1(b).

"JV K1 Products" means the JV K1 BiCS Products plus any other products manufactured using K1 Facility cleanroom space in accordance with Article 3 that are identified [***] as K1 lots and allocated to a JV under the applicable JV's JV Master Agreement.

"JV Lease Agreements" means the FPL Lease Agreement, the FAL Lease Agreement and FFL Lease Agreement.

"JV Master Agreements" means the FAL Master Agreement, the FFL Master Agreement and the FPL Master Agreement.

"JV MCEIAs" means the FPL MCEIA, the FAL MCEIA and the FFL MCEIA.

"JV New Y2 BiCS Products" has the meaning set forth in the New Y2 Agreement.

"JV Operating Agreements" means the FPL Operating Agreement, the FAL Operating Agreement and the FFL Operating Agreement.

"JV Products" means NAND Flash Memory Products and BiCS Products, in each case manufactured for the JVs.

"JV K1 BiCS Products" has the meaning set forth in Section 3.1(b).

"JV K1 NAND Flash Memory Products" has the meaning set forth in Section 3.4.

"JV Y3 BiCS Products" has the meaning set forth in the New Y2 Agreement.

"JV Y4 BiCS Products" has the meaning set forth in the New Y2 Agreement.

"JV Y5 BiCS Products" has the meaning set forth in the New Y2 Agreement.

"JV Y6 BiCS Products" has the meaning set forth in the Y6 Agreement.

"JVRA" means that certain Joint Venture Restructure Agreement, dated as of January 29, 2009, by and among the Parties, the JVs and certain of their respective Affiliates.

"K1 BiCS Products" has the meaning set forth in Section 3.1(b).

"K1 Capacity Ratio" for either WD or TMC means [***]

"K1 Capacity Transfer" has the meaning set forth in Section 4.8(f)(iv).

[***]

[***]

"K1 Facility" means the production facility currently under construction in Iwate, Japan owned by TMC and forming part of the Kitakami Facility, including a building shell, cleanroom, and all culverts, piping, ducting and associated infrastructure connecting thereto.

"K1 Fixed Manufacturing Costs" means the K1 Manufacturing Costs described on Schedule 8.4(b)(i).

"K1 JV BiCS Space" has the meaning set forth in Section 3.2(a)(i).

"K1 JV Engineers" has the meaning set forth in Section 7.1(a).

"K1 JV Headcount Plan" has the meaning set forth in Section 7.2.

"K1 JV Space" means the K1 JV BiCS Space plus any cleanroom space used for the production of NAND Flash Memory Products by the JVs in the K1 Facility.

"K1 Manufacturing Costs" has the meaning set forth in Section 8.1.

"K1 MCEIA" means that certain K1 Mutual Contribution and Environmental Indemnification Agreement, dated as of even date herewith, by and among Toshiba Memory, SanDisk Cayman, SanDisk Ireland and SanDisk Flash.

"K1 Minimum Commitment" has the meaning set forth in Section 4.1(a).

"K1 NAND Flash Memory Products" has the meaning set forth in Section 3.4.

"K1 Operating Committee" has the meaning set forth in Section 6.1.

"K1 Product Fixed Manufacturing Costs" has the meaning set forth in Section 8.4(b)(i).

"K1 Product Manufacturing Costs" has the meaning set forth in Section 8.4(a).

"K1 Product Variable Manufacturing Costs" has the meaning set forth in Section 8.4(b)(ii).

"K1 Products" means K1 BiCS Products plus any other products manufactured using K1 Facility cleanroom space in accordance with Article 3 that are identified [***] as K1 lots.

[***]

"K1 Unilateral BiCS Expansion" means a Unilateral BiCS Expansion made within the K1 Facility.

[***]

"K1 Unilateral BiCS Products" has the meaning set forth in Section 3.1(b).

[***]

"K1 Unilateral Space" means [***]

"K1 Variable Manufacturing Costs" means the K1 Manufacturing Costs described on Schedule 8.4(b)(ii).

"Kitakami Facility" means TMC's facilities in Iwate, Japan, including the K1 Facility.

"L/M" means either lots per month or Equivalent Lots per month, in each case as mutually agreed by the Parties.

"Law" means all applicable provisions of all (a) constitutions, treaties, statutes, laws (including common law), rules, regulations, ordinances or codes; (b) orders, decisions, judgments, awards or decrees; and (c) requests, guidelines or directives (whether or not having the force of law), in each case of any Governmental Authority of any applicable jurisdiction.

"Management Representatives" has the meaning set forth in the JV Agreements.

"Master Operative Documents" means the Existing Agreements and the New Agreements.

"Material Breach" has the meaning set forth in Section 14.3.

[***]

[***]

"NAND Flash Memory Products" has the meaning set forth in the JV Agreements.

"New Agreements" has the meaning set forth in the Recitals.

"New Y2 Agreement" means that certain New Y2 Facility Agreement, dated as of October 20, 2015, by and among TMC, SanDisk LLC, SanDisk Cayman, SanDisk Ireland, SanDisk Flash, FPL, FAL and FFL.

[***]

"New Y2 Facility" means the production facility within the Yokkaichi Facility described in the New Y2 Agreement.

"New Y2 Unilateral BiCS Expansion" means a Unilateral BiCS Expansion made within the New Y2 Facility.

"Non-NAND Products" means any technology or product other than NAND Flash Memory Products.

"Operating Committees" means the Y3 Operating Committee, Y4 Operating Committee, Y5 Operating Committee (each as defined in the JV Agreements), the New Y2 Operating Committee (as defined in the New Y2 Agreement), the Y6 Operating Committee (as defined in the Y6 Agreement) and the K1 Operating Committee (as defined in this Agreement).

[***]

[***]

"Parent Parties" has the meaning set forth in the preamble to this Agreement.

"Parties" has the meaning set forth in the preamble to this Agreement.

"Person" means any individual or entity, including any private or public real estate operating company or real estate investment trust, exempted company, exempted limited partnership, private limited company, corporation, partnership, limited partnership, limited liability company, trust, charitable trust or other legal entity, wherever organized, or any unincorporated association or Governmental Authority.

"Personnel" has the meaning set forth in Section 7.1(d).

[***]

[***]

"Process Technology" means [***]

"Product Development Agreement" means the Third Amended and Restated Product Development Agreement, dated as of March 1, 2011, between SanDisk LLC and TMC.

[***]

"Proprietary BiCS Products" means BiCS Products that are proprietary to a Parent Party.

"Proprietary Flash Products" means Proprietary NAND Flash Memory Products and Proprietary BiCS Products.

"Proprietary NAND Flash Memory Products" means NAND Flash Memory Products which are proprietary to a Parent Party.

"Purchase and Supply Agreements" means the FPL Purchase and Supply Agreements, the FAL Purchase and Supply Agreements, and the FFL Purchase and Supply Agreements.

"Quarterly Manufacturing Cost Reconciliation" has the meaning set forth in Section 8.1(d).

"Ramp Down Provisions" means: (i) Sections 8.1(d)(i) and 8.1(e)(i) of the FAL Master Agreement, (ii) Sections 8.1(d)(i) and 8.1(e)(i) of the FPL Master Agreement, (iii) Section 9.1(d)(i) of the FFL Master Agreement, (iv) Section 1.5(a)(iv) of the New Y2 Agreement, (v) Section 12.1(e) of the Y6 Agreement, and (vi) Section 12.1(h) of this Agreement.

"Ramp-Up Commitment" means the investment necessary to implement an agreed BiCS Expansion, BiCS Technology Transition, BiCS Conversion, or K1 Capacity Transfer, in each case using the K1 Facility, as set forth in a JV's Investment Plan (as defined in the JV Agreements), after the K1 Minimum Commitment has been fulfilled.

"Receiving Party" has the meaning set forth in Section 13.2(a).

[***]

"SanDisk" has the meaning set forth in the preamble to this Agreement.

"SanDisk Cayman" has the meaning set forth in the preamble to this Agreement.

"SanDisk Flash" has the meaning set forth in the preamble to this Agreement.

"SanDisk Ireland" has the meaning set forth in the preamble to this Agreement.

"SanDisk LLC" has the meaning set forth in the preamble to this Agreement.

"SEC" means the Securities and Exchange Commission of the United States.

[***]

[***]

[***]

"Settlement Agreement" means the Confidential Settlement and Mutual Release Agreement, dated December 12, 2017, among Toshiba, TMC, WD and SanDisk.

[***]

"Start-Up Costs" has the meaning set forth in Section 2.5(b).

"Subsidiary" of any Person means any other Person:

i. more than 50% of whose outstanding shares or securities (representing the right to vote for the election of directors or other managing authority) are, or

ii. which does not have outstanding shares or securities (as may be the case in a partnership, joint venture or unincorporated association), but more than 50% of whose ownership interest representing the right to make decisions (equivalent to those generally reserved for the board of directors of a corporation) for such other Person is,

now or hereafter owned or controlled, directly or indirectly, by such Person, but such other Person shall be deemed to be a Subsidiary only so long as such ownership or control exists; provided, however, that the term Subsidiary, when used in relation to a Party or any of its Affiliates, shall not include any JV or any of the JVs' Subsidiaries (except that, when used in relation to a Party that is a JV, the term Subsidiary shall include such JV's own Subsidiaries).

[***]

"Threshold Capacity Ratio" means [***]

"TMC" has the meaning set forth in the preamble to this Agreement.

"TMC Personnel" has the meaning set forth in Section 7.1(b).

"TMC Representative" has the meaning set forth in Section 6.1.

[***]

"TMI" has the meaning set forth in the preamble to this Agreement.

[***]

"Toshiba" has the meaning set forth in the Recitals.

"Toshiba Capacity" has the meaning ascribed to such term in the JVRA and includes, for the avoidance of doubt, any Toshiba Unilateral Expansion Space (as defined in the FFL Master Agreement), Yokkaichi Unilateral BiCS Expansion Space (as defined in each of the New Y2 Agreement and the Y6 Agreement), and any K1 Unilateral Production Space (as defined in this Agreement).

"Toshiba Memory" has the meaning set forth in the preamble to this Agreement.

[***]

[***]

"Toshiba R&D Tools" has the meaning set forth in Section 3.3(c).

[***]

[***]

"Undertaking" means the Parent Guarantee and Undertaking as to Collaboration, dated December 12, 2017, entered into by and among WD, Toshiba and TMC, and acknowledged and agreed by SanDisk and the JVs.

"Unilateral BiCS Expansion" has the meaning set forth in Section 4.2(d)(i).

"WD" has the meaning set forth in the preamble to this Agreement.

"WD Personnel" has the meaning set forth in Section 7.1(c).

"WD Representative" has the meaning set forth in Section 6.1.

"WD Team" has the meaning set forth in Section 7.1(e).

"WD-TMC PCLA" means the Patent Cross License Agreement Between Western Digital Corporation and Toshiba Memory Corporation, dated December 12, 2017, among WD, SanDisk [***] and TMC.

[***]

"Y3 Facility" means the production facility within the Yokkaichi Facility described in the FPL Master Agreement.

[***]

"Y4 Facility" means the production facility within the Yokkaichi Facility described in the FAL Master Agreement.

[***]

"Y5 Facility" means the production facility within the Yokkaichi Facility described in the FFL Master Agreement.

“Y6 Agreement” means that certain Y6 Facility Agreement, dated as of December 12, 2017, by and among TMC, WD, SanDisk LLC, SanDisk Cayman, SanDisk Ireland, SanDisk Flash, FPL, FAL and FFL.

“Y6 Capacity Ratio” has the meaning set forth in the Y6 Agreement.

[***]

“Y6 Facility” means the production facility within the Yokkaichi Facility described in the Y6 Agreement.

“Y6 MCEIA” means that certain Y6 Mutual Contribution and Environmental Indemnification Agreement, dated as of December 12, 2017, by and among TMC, SanDisk Cayman, SanDisk Ireland and SanDisk Flash.

“Y6 Unilateral BiCS Expansion” means a Unilateral BiCS Expansion made within the Y6 Facility.

[***]

[***]

[***]

[***]

“Yokkaichi Facility” means TMC’s facilities in Yokkaichi Japan, including the New Y2 Facility, the Y3 Facility, the Y4 Facility, the Y5 Facility, the Y6 Facility and TMC’s Asahi facility

Execution Version

K1 FACILITY AGREEMENT

by and among

TOSHIBA MEMORY CORPORATION,

TOSHIBA MEMORY IWATE CORPORATION,

WESTERN DIGITAL CORPORATION,

SANDISK LLC,

SANDISK (CAYMAN) LIMITED,

SANDISK (IRELAND) LIMITED,

SANDISK FLASH B.V.,

FLASH PARTNERS, LTD.,

FLASH ALLIANCE, LTD.

and

FLASH FORWARD, LTD.

dated as of

MAY 15, 2019

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Exhibit 21

WESTERN DIGITAL COPORATION
SUBSIDIARIES OF THE COMPANY

Name of Entity	State or Other Jurisdiction of Incorporation or Organization
Amplidata N.V.	Belgium
Amplidata, Inc.	Delaware
EasyStore Memory Limited	Ireland
Fusion Multisystems Ltd.	Canada
Fusion-io (Beijing) Info Tech Co., Ltd	China
Fusion-io Holdings S.A.R.L.	Luxembourg
Fusion-io LLC	Delaware
Fusion-io Poland SP.Z.O.O.	Poland
Fusion-io Singapore Private Ltd	Singapore
HGSP (Shenzhen) Co., Ltd.	China
HGSP Holdco Hong Kong Limited	Hong Kong
HGST (Shenzhen) Co., Ltd.	China
HGST (Thailand) Ltd.	Thailand
HGST Asia Pte. Ltd.	Singapore
HGST Consulting (Shanghai) Co., Ltd.	China
HGST Europe, Ltd.	United Kingdom
HGST Japan, Ltd.	Japan
HGST Malaysia Sdn. Bhd.	Malaysia
HGST Netherlands B.V.	Netherlands
HGST Philippines Corp.	Philippines
HGST Singapore Pte. Ltd.	Singapore
HGST Technologies India Private Limited	India
HGST Technologies Malaysia Sdn. Bhd.	Malaysia
HGST, Inc.	Delaware
HICAP Properties Corp.	Philippines
Keen Personal Media, Inc.	Delaware
Pacifica Insurance Corporation	Hawaii
Prestadora SD, S. de R.L. de C.V.	Mexico
Read-Rite Philippines, Inc.	Philippines
Rising Silicon Inc.	Texas
Sandbox Expansion LLC	Delaware
SanDisk (Cayman) Limited	Cayman Islands
SanDisk (Ireland) Limited	Ireland
SanDisk 3D IP Holdings Ltd	Cayman Islands
SanDisk 3D LLC	Delaware
SanDisk B.V.	Netherlands
SanDisk Bermuda Limited	Bermuda
SanDisk Bermuda Unlimited	Bermuda
SanDisk BiCS IP Holdings Ltd	Cayman Islands
SanDisk Brasil Participações Ltda.	Brazil
SanDisk C.V.	Netherlands
SanDisk China Limited	Ireland
SanDisk China LLC	Delaware

Exhibit 21

WESTERN DIGITAL COPORATION
SUBSIDIARIES OF THE COMPANY

Name of Entity	State or Other Jurisdiction of Incorporation or Organization
SanDisk Enterprise IP LLC	Texas
SanDisk Equipment Y.K.	Japan
SanDisk Flash B.V.	Netherlands
SanDisk France SAS	France
SanDisk G.K.	Japan
SanDisk GmbH	Germany
SanDisk Holding B.V.	Netherlands
SanDisk Holdings LLC	Delaware
SanDisk Hong Kong Limited	Hong Kong
SanDisk IL Ltd.	Israel
SanDisk India Device Design Centre Private Limited	India
SanDisk Information Technology (Shanghai) Co. Ltd.	China
SanDisk International Holdco B.V.	Netherlands
SanDisk International Limited	Ireland
SanDisk International Middle East FZE	United Arab Emirates
SanDisk Italy S.R.L.	Italy
SanDisk Korea Limited	Korea
SanDisk Latin America Holdings LLC	Delaware
SanDisk LLC	Delaware
SanDisk Malaysia Sdn. Bhd.	Malaysia
SanDisk Manufacturing Americas, LLC	Delaware
SanDisk Manufacturing Unlimited Company	Ireland
SanDisk Operations Holdings Limited	Ireland
SanDisk Pazarlama Ve Ticaret Limited Sirketi	Turkey
SanDisk Scotland, Limited	United Kingdom
SanDisk Semiconductor (Shanghai) Co. Ltd.	China
SanDisk Spain, S.L.U.	Spain
SanDisk Storage Malaysia Sdn. Bhd.	Malaysia
SanDisk Sweden AB	Sweden
SanDisk Switzerland Sarl	Switzerland
SanDisk Taiwan Limited	Taiwan
SanDisk Technologies LLC	Texas
SanDisk Trading (Shanghai) Co. Ltd.	China
SanDisk Trading Holdings Limited	Ireland
SanDisk UK, Limited	United Kingdom
SanDisk, Limited	Japan
SD International Holdings Ltd.	Cayman Islands
Shenzhen Hailiang Storage Products Co., Ltd.	China
SMART Storage Systems GmbH	Austria
STEC Bermuda, LP	Bermuda
STEC Europe B.V.	Netherlands
STEC Germany GmbH	Germany
STEC Hong Kong Ltd.	Hong Kong

Exhibit 21

WESTERN DIGITAL COPORATION
SUBSIDIARIES OF THE COMPANY

Name of Entity	State or Other Jurisdiction of Incorporation or Organization
STEC International Holding, Inc.	California
STEC Italy SRL	Italy
STEC R&D Ltd.	Cayman Islands
Suntech Realty, Inc.	Philippines
Tegile Systems Private Limited	India
Virident Systems International Holdings Ltd.	Cayman Islands
Virident Systems, LLC	Delaware
Viviti Technologies Pte. Ltd.	Singapore
WD Media (Malaysia) Sdn.	Malaysia
WD Media (Singapore) Pte. Ltd.	Singapore
Western Digital (Argentina) S.A.	Argentina
Western Digital (France) SARL	France
Western Digital (Fremont), LLC	Delaware
Western Digital (I.S.) Limited	Ireland
Western Digital (Malaysia) Sdn. Bhd.	Malaysia
Western Digital (S.E. Asia) Pte Ltd	Singapore
Western Digital (Thailand) Company Limited	Thailand
Western Digital (UK) Limited	United Kingdom
Western Digital Australia Pty Ltd	Australia
Western Digital Canada Corporation	Ontario, Canada
Western Digital Capital Global, Ltd.	Cayman Islands
Western Digital Capital, LLC	Delaware
Western Digital Deutschland GmbH	Germany
Western Digital Do Brasil Comercio E Distribuicao De Produtos De Informatica Ltda.	Brazil
Western Digital Federal, LLC	Delaware
Western Digital Hong Kong Limited	Hong Kong
Western Digital Information Technology (Shanghai) Company Ltd.	China
Western Digital International Ltd.	Cayman Islands
Western Digital Ireland, Ltd.	Cayman Islands
Western Digital Japan Ltd.	Japan
Western Digital Korea, Ltd.	Korea
Western Digital Latin America, Inc.	Delaware
Western Digital Netherlands B.V.	Netherlands
Western Digital Taiwan Co., Ltd.	Taiwan
Western Digital Tech and Regional Center (M) Sdn. Bhd.	Malaysia
Western Digital Technologies, Inc.	Delaware

Exhibit 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
Western Digital Corporation:

We consent to the incorporation by reference in the registration statements on Form S-8 (Nos. 333-41423, 33-56128, 333-122475, 333-129813, 333-155661, 333-163133, 333-180286, 333-185194, 333-190290, 333-191216, 333-191910, 333-202646, 333-207842, 333-211420, 33-60168, 333-221407, and 333-228331) of Western Digital Corporation of our report dated August 27, 2019, with respect to the consolidated balance sheets of Western Digital Corporation as of June 28, 2019 and June 29, 2018, and the related consolidated statements of operations, comprehensive income (loss), shareholders' equity, and cash flows for each of the years in the three-year period ended June 28, 2019, and the related notes (collectively, the "consolidated financial statements"), and the effectiveness of internal control over financial reporting as of June 28, 2019, which report appears in the June 28, 2019, annual report on Form 10-K of Western Digital Corporation.

/s/ KPMG LLP

Irvine, California
August 27, 2019

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Stephen D. Milligan, certify that:

1. I have reviewed this Annual Report on Form 10-K of Western Digital Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15(d)-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ STEPHEN D. MILLIGAN

Stephen D. Milligan
Chief Executive Officer

Dated: August 27, 2019

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Robert K. Eulau, certify that:

1. I have reviewed this Annual Report on Form 10-K of Western Digital Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15(d)-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ ROBERT K. EULAU

Robert K. Eulau
Chief Financial Officer and Chief Accounting Officer

Dated: August 27, 2019

Exhibit 32.1

The following certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350 and in accordance with SEC Release No. 33-8238. This certification shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall it be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that Western Digital Corporation specifically incorporates it by reference.

Certification of Chief Executive Officer

Pursuant to 18 U.S.C. § 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Western Digital Corporation, a Delaware corporation (the “Company”), hereby certifies, to his knowledge, that:

(i) the accompanying Annual Report on Form 10-K of the Company for the period ended June 28, 2019 (the “Report”) fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ STEPHEN D. MILLIGAN

Stephen D. Milligan

Chief Executive Officer

Dated: August 27, 2019

Exhibit 32.2

The following certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350 and in accordance with SEC Release No. 33-8238. This certification shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall it be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that Western Digital Corporation specifically incorporates it by reference.

Certification of Chief Financial Officer

Pursuant to 18 U.S.C. § 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Western Digital Corporation, a Delaware corporation (the "Company"), hereby certifies, to his knowledge, that:

(i) the accompanying Annual Report on Form 10-K of the Company for the period ended June 28, 2019 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ ROBERT K. EULAU

Robert K. Eulau

Chief Financial Officer and Chief Accounting Officer

Dated: August 27, 2019