

**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 July 1, 2022

Or

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

For the transition period from _____ to _____

Commission file number: 1-8703



Western Digital[®]

WESTERN DIGITAL CORPORATION

(Exact Name of Registrant as Specified in Its Charter)

Delaware

*(State or other jurisdiction of
incorporation or organization)*

5601 Great Oaks Parkway San Jose, California

(Address of principal executive offices)

33-0956711

(I.R.S. Employer Identification No.)

95119

(Zip Code)

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

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

<u>Title of each class</u>	<u>Trading symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock, \$0.01 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
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

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

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

The aggregate market value of the registrant's common stock held by non-affiliates of the registrant on December 31, 2021, the last business day of the registrant's most recently completed second fiscal quarter, was \$17.0 billion, based on the closing sale price as reported on the Nasdaq Global Select Market.

Documents Incorporated by Reference

Part III incorporates by reference certain information from the registrant's definitive proxy statement (the "Proxy Statement") for the 2022 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the end of the 2022 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.

WESTERN DIGITAL CORPORATION
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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.

In this Annual Report on Form 10-K, we make references to our website at www.westerndigital.com. References to our website through this Form 10-K are provided for convenience only and the content on our website does not constitute a part of, and shall not be deemed incorporated by reference into, this Annual Report on Form 10-K.

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, 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:

- *our market position and portfolio synergies;*
- *our product plans and business strategies, including our ongoing review of strategic alternatives;*
- *consumer trends and market conditions, market opportunities and our market position;*
- *expectations regarding the global macroeconomic environment, including with respect to economic volatility and uncertainty, declines in consumer confidence and economic growth, customers reducing their inventories, rising interest rates and fuel prices, inflation, the ongoing conflict in Ukraine and the effects of the COVID-19 pandemic;*
- *expectations regarding supply chain conditions and constraints;*
- *expectations regarding demand trends and market conditions for our products and expected future financial performance;*
- *expectations regarding our product momentum and product development and technology plans;*
- *expectations regarding capital expenditure plans and investments;*
- *expectations regarding our Flash Ventures joint venture with Kioxia Corporation (“Kioxia”), the flash industry and our flash wafer output plans and sources of funding for related expenditures;*
- *expectations regarding our effective tax rate and our unrecognized tax benefits; and*
- *our beliefs regarding our capital allocation plans and the sufficiency of our available liquidity to meet our working capital, debt and capital expenditure needs.*

These forward-looking statements are based on management’s current expectations, represent the most current information available to the Company as of the date of this Annual Report on Form 10-K and are subject to a number of risks, uncertainties and other factors that could cause actual results or performance to differ materially from those expressed or implied in the forward-looking statements. These risks and uncertainties are described in Part I, Item 1A of this Annual Report on Form 10-K. You are urged to carefully review the disclosures we make concerning risks and other factors that may affect the outcome of our forward-looking statements and 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 update or revise these forward-looking statements to reflect new information or events after the date of this document or to reflect the occurrence of unanticipated events, except as required by law.

PART I

Item 1. *Business*

General

Western Digital Corporation (“Western Digital”) is on a mission to unlock the potential of data by harnessing the possibility to use it. We are a leading developer, manufacturer, and provider of data storage devices based on both flash-based products (“Flash”) and hard disk drives (“HDD”) technologies. With dedicated business units driving advancements in NAND flash and magnetic recording technologies, we create and drive innovations needed to help customers capture, preserve, access, and transform an ever-increasing diversity of data.

Founded in 1970 in Santa Ana, California, Western Digital is now a Standard & Poor’s 500 (“S&P 500”) company headquartered in San Jose, California. We have one of the technology industry’s most valuable patent portfolios with approximately 13,500 active patents worldwide. We have a rich heritage of innovation and operational excellence, a wide range of intellectual property (“IP”) assets and broad research and development (“R&D”) capabilities. The strong growth in amount, value, and use of data continues, creating a global need for larger, faster and more capable storage solutions.

We are a customer-focused organization that has developed deep relationships with industry leaders to continue to deliver innovative solutions to help users capture, store and transform data across a boundless range of applications. With much of the world’s data stored on Western Digital products, our innovation powers the global technology ecosystem from consumer devices to the edge to the heart of the cloud. We enable cloud, Internet, and social media infrastructure players to build more powerful, cost effective and efficient data centers. We help original equipment manufacturers (“OEM”) address storage opportunities and solutions to capture and transform data in a myriad of devices and edge technologies. We have also built strong consumer brands with tools to manage vast libraries of personal content and to push the limits of what’s possible for storage. At Western Digital, we continue to transform ourselves to address the growth in data by providing what we believe to be the broadest range of storage technologies in the industry with a comprehensive product portfolio and global reach.

Industry

We operate in the data storage industry. The ability to access, store and share data from anywhere on any device is increasingly important to our customers and end users. From the intelligent edge to the cloud, data storage is a fundamental component underpinning the global technology architecture. Our strengths in innovation and cost leadership, diversified product portfolio and broad routes to market provide a foundation upon which we are solidifying our position as an essential building block of the digital economy. There is tremendous market opportunity flowing from the rapid global adoption of the technology architecture built with cloud infrastructure tied to intelligent endpoints all connected by high performance networks. The value and urgency of data storage at every point across this architecture has never been clearer.

The growth in computing complexity, cloud computing applications, connected mobile devices and Internet connected products, and edge devices is driving unabated growth in the volume of digital content to be stored and used. This growth has led to a creation of new form factors for data storage. The storage industry is increasingly utilizing tiered architectures with HDD, solid state drives (“SSD”) and other non-volatile memory-based storage to address an expanding set of uses and applications. We believe our expertise and innovation across both Flash and HDD technologies enable us to bring powerful solutions to a broader range of applications. We continuously monitor 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.

Competition

Our industry is highly competitive. We compete with manufacturers of Flash and HDD for cloud, client, and consumer end markets. In Flash, we compete with vertically integrated suppliers such as Kioxia, Micron Technology, Inc., Samsung Electronics Co., Ltd., SK hynix, Inc., Solidigm, Yangtze Memory Technologies Co., Ltd. and numerous smaller companies that assemble flash into products. In HDD, we compete with Seagate Technology plc and Toshiba Electronic Devices & Storage Corporation.

Business Strategy

Our overall strategy is to leverage our innovation, technology 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 Flash and HDD technologies. We strive to successfully execute our strategy through the following foundational elements in order to create long-term value for our customers, partners, investors and employees:

- *Innovation and Cost Leadership:* We continue to innovate and develop advanced technologies across platforms for both Flash and HDD 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 Flash and HDD 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 cloud, client and consumer end markets through a relentless focus on appropriately scaling our operations across both Flash and HDD 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:

- a broad product portfolio that differentiates us as a leading developer and manufacturer of integrated products and solutions based on both Flash and HDD, making us a more strategic supply partner to our large-scale customers who have storage needs across the data infrastructure ecosystem;
- efficient and flexible manufacturing capabilities, allowing us to leverage our Flash and HDD R&D and capital expenditures to deliver innovative and cost-effective storage solutions to multiple markets; and
- deep relationships with industry leaders across the data ecosystems that give us the broadest routes to market.

In June 2022, we announced that we are reviewing potential strategic alternatives aimed at further optimizing long-term value for our stockholders. The Executive Committee of our Board, chaired by our CEO, is overseeing the assessment process, and the potential strategic alternatives include, among other things, options for separating our Flash and HDD business units.

Technology

Flash Technologies. Flash products provide non-volatile data storage based on flash technology. We develop and manufacture solid state storage products for a variety of applications including enterprise or cloud storage, client storage, automotive, mobile devices and removable memory devices. Over time, we have successfully developed and commercialized successive generations of 3-dimensional flash technology with increased numbers of storage bits per cell in an increasingly smaller form factor, further driving cost reductions. We devote significant research and development resources to the development of highly reliable, high-performance, cost-effective flash-based technology and are pursuing developments in next generation flash-based technology capacities. 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.

Hard Disk Drives. HDD products provide non-volatile data storage by recording magnetic information on a rotating disk. We develop and manufacture substantially all of the recording heads and magnetic media used in our HDD products. We have led the industry in innovation to drive increased areal density and high-performance attributes. Our improvements in HDD capacity, which lower product costs over time, have been enabled largely through advancements in magnetic recording head and media technologies. Our multi-year product roadmap for high-capacity HDD, which combine ePMR, OptiNAND, UltraSMR and triple stage actuators to deliver a cutting edge portfolio of drives, in commercial volumes, at a wide variety of capacity points, puts Western Digital in great position to capitalize on the opportunities presented by the large and growing storage markets. 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.

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.

Our Data Solutions

Our broad portfolio of technology and products address multiple end markets and are comprised of the Western Digital®, SanDisk® and WD brands®. In 2022, we refined the end markets we report to be “Cloud”, “Client” and “Consumer”.

Cloud represents a large and growing end market comprised primarily of products for public or private cloud environments and enterprise customers, which we believe we are uniquely positioned to address as the only provider of both flash and hard drive products. We provide the Cloud end market with an array of high-capacity enterprise HDD and high-performance enterprise SSD, and platforms. Our capacity enterprise helium hard drives provide high-capacity storage needs and low total cost of ownership per GB for the growing cloud data center market. These drives are primarily for use in data storage systems, in tiered storage models and where data must be stored reliably for years. Our high-performance enterprise class SSD include high-performance flash-based SSD and software solutions that are optimized for performance applications providing a range of capacity and performance levels primarily for use in enterprise servers and supporting high volume on-line transactions, data analysis and other enterprise applications. We also provide higher value data storage platforms to the market.

Through the Client end market, we provide our OEM and channel customers a broad array of high-performance flash and hard drive solutions across personal computer (“PC”), mobile, gaming consoles, automotive, virtual reality headsets, at-home entertainment, and industrial spaces. We provide numerous data solutions that we incorporate into our client’s devices, which consist of HDD and SSD desktop and notebook PCs, smart video systems, gaming consoles and set top boxes, as well as flash-based embedded storage products for mobile phones, tablets, notebook PCs and other portable and wearable devices, automotive applications, Internet of Things, industrial and connected home applications. Our HDD and SSD are designed for use in devices requiring high performance, reliability and capacity with various attributes such as low cost per gigabyte, quiet acoustics, low power consumption and protection against shocks.

The Consumer end market is highlighted by our broad range of retail and other end-user products, which capitalize on the strength of our product brand recognition and vast points of presence around the world. We provide consumers with a portfolio of HDD and SSD embedded into external storage products and removable Flash, which include cards, universal serial bus (“USB”) flash drives and wireless drives, through our retail and channel routes to market. 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 SSD 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, cameras and smart video 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.

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 optimizing 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 approximately 13,500 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 Flash and HDD 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.

Flash and HDD 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. For example, we are taking aggressive actions to restructure our client HDD manufacturing footprint in light of ongoing trends in the HDD Client market as PCs shift from using HDD to Flash technology. 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. We also leverage contract manufacturers when strategically advantageous.

Our vertically integrated, in-house assembly and test operations for our HDD products are concentrated in Prachinburi and Bang Pa-In, Thailand; Penang, Johor Bahru, and Kuching, Malaysia; Laguna, Philippines; Shenzhen, China; San Jose and Fremont, CA, USA.

Ventures with Kioxia

Substantially all of our flash-based supply requirements for Flash is obtained from our ventures with Kioxia, which provide us with leading-edge, high-quality and low-cost flash memory wafers. 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. While we do not unilaterally control the operations of our ventures with Kioxia, we believe that our business venture relationship with Kioxia helps us reduce product costs, increases our ability to control the quality of our products and speeds delivery of our products to our customers. Our business ventures with Kioxia are located primarily in Yokkaichi and Kitakami, Japan, and our in-house assembly and test operations are located in Shanghai, China and Penang, Malaysia.

We and Kioxia 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 Kioxia 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 Kioxia at cost and then resells those wafers to us and Kioxia at cost plus a small mark-up. We are obligated to take our share of the output from these ventures or 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 50.0% of each Flash Ventures entity's capital investments to the extent that the Flash Ventures entity's operating cash flow is insufficient to fund these investments. We co-develop flash technologies (including process technology and memory design) with Kioxia and contribute IP for Flash Ventures' use.

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' primary manufacturing site has been located in Yokkaichi, Japan. The Yokkaichi site, which is owned and operated by Kioxia, currently includes five wafer fabrication facilities. We have jointly invested, and intend to continue to jointly invest, with Kioxia in manufacturing equipment for the Yokkaichi fabrication facilities. We also have agreements that extend Flash Ventures to a wafer fabrication facility located in Kitakami, Japan, referred to as "K1", which is operated by Kioxia Iwate Corporation, a wholly owned subsidiary of Kioxia. 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. K1 is now fully operational. In January 2022, we entered into additional agreements regarding Flash Ventures' investment in a new wafer fabrication facility currently under construction in Yokkaichi, Japan, referred to as "Y7", which upon completion will be the sixth wafer fabrication facility at the Yokkaichi site. The primary purpose of Y7 is to provide clean room space to continue the transition of existing flash-based wafer capacity to newer flash technology nodes. The first phase of construction of Y7 is complete and output is expected to commence in the first half of 2023.

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

Materials and Supplies

Our Flash consists of flash-based memory, controllers and firmware and other components. Substantially all of our flash-based memory is supplied by our business ventures with Kioxia. 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 Kioxia to establish continuous supply of flash-based memory and controllers.

HDD consists primarily of recording heads, magnetic media, controllers and firmware, 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 for these components 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, manufacturing, and testing. We believe the use of our in-house manufacturing, assembly and test facilities provides the controls necessary to provide the demanding capabilities, performance and reliability our customers require.

We generally retain multiple suppliers for our component requirements but, for business or technology reasons, we source some of our components from a limited number of sole or single source providers. For a discussion of associated risks, see Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K.

Sales and Distribution

We sell our products to computer manufacturers and OEMs, cloud service providers, resellers, distributors and retailers throughout the world. 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 71%, 78% and 72% of our net revenue for 2022, 2021 and 2020, 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 markets. 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.

For each of 2022, 2021 and 2020, no single customer accounted for 10% or more of our net revenue.

Seasonality

We have historically experienced seasonal fluctuations in our business with higher levels of demand in the first and second quarters 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 5, *Supplemental Financial Statement Data*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Human Capital Management

We have been on a journey to transform the Company and redefine the data storage market. Our employees are paramount to our success. To this end, our people strategy is grounded in the intention to hire, engage and retain the best talent to support our vision of creating breakthrough innovation that enables the world to actualize its aspirations. In 2022, we hired a new Chief People Officer to help accelerate the transformation of our human resources function to be more people-centric and to drive better outcomes for the business. We employ approximately 65,000 people worldwide, and our diverse team spans 38 countries. By geography, approximately 86% of our employees are in Asia Pacific, 12% in the Americas, and 2% in Europe, the Middle East and Africa.

Diversity, Equity and Inclusion

We want to leverage the power and potential of diversity. We are committed to promoting an inclusive environment where every individual can thrive through a sense of belonging, respect and contribution.

Our Employee Resource Groups (“ERGs”) help create an inclusive culture that embraces the uniqueness of our employees. We have several ERG communities, focusing on women, LGBTQ+, racial and ethnic minorities, military and people with disabilities. In 2022, we were once again recognized by Human Rights Campaign Best Places to Work for LGBTQ+ Equality 2022. We also received the Above and Beyond Award and the Pro Patria Award from the Employer Support of the Guard and Reserve for our support of employees who serve in the U.S. National Guard and Reserve.

We are committed to hiring inclusively, providing training and development opportunities and ensuring equitable pay for employees, and we are continuing to focus on increasing diverse representation at every level of our company. As of July 1, 2022, four of the nine members of our Board of Directors were women, and women represented 26% of our management positions and 23% of our technical staff. Additionally, members of Asian, Black/African American, Hispanic/Latinx or other racially or ethnically diverse communities, represented 60% of our U.S. management positions. We believe that developing a diverse talent pool of new college graduates is essential, and we saw percentage point increases of 2.5 for women, 1.4 for Hispanic/Latinx and 1.0 for multiracial representation among our new college graduates in 2022. For additional detail about our workforce, we encourage you to review our Sustainability Report, which we publish annually and make available on our corporate website. Nothing on our website shall be deemed incorporated by reference into this Annual Report on Form 10-K.

In 2022, we launched a self-identification initiative that invited employees to share more about who they are across dimensions of gender, gender identity, veterans and disabilities. Participation was optional, data was protected and the results were anonymized. We believe an in-depth understanding of our employee population will enable us to better engage and retain our talent.

Compensation and Benefits

We believe in the importance of investing in our people, and we do that through a robust Total Rewards program. We benchmark our compensation and benefits programs annually using market data from reputable third-party consultants. We also conduct internal focus groups and employee surveys to inform programs and identify opportunities.

We promote a strong pay-for-performance culture and offer employees competitive compensation consisting of base salary and both short-term and long-term incentives. In the last year, we also implemented a global recognition program to celebrate the contributions of employees who bring our core values and cultural attributes to life.

To ensure that our pay practices are fair and equitable, we conduct an annual pay equity assessment to ensure that men and women receive equal pay for equal work. As part of this review, we analyze current pay which takes into consideration various, non-discriminatory factors, such as seniority, experience, skills, performance, location, track and hiring and promotion dates. We use the results to make pay adjustments as needed. We are expanding our analysis of 2022 pay equity to cover 100% of our employee population globally.

We also believe in creating an environment that allows our employees to prioritize their health and well-being. We provide competitive benefits, including health coverage, life and disability insurance, retirement, paid time off, an employee assistance program and an employee stock purchase plan. In response to employee input in 2022, we expanded benefit access for our employees to caregivers and enhanced behavioral health benefits for dependent children in the U.S.; enhanced medical coverage in our larger countries; and offered flexible benefits in India.

Talent Attraction, Development and Engagement

Foundational to our people strategy is the attraction, development and engagement of our employees. We need a workforce that is as unique and diverse as our customer base, and it starts with talent attraction. To increase the talent level of our diverse candidate pools, we adopted a skills-based philosophy that screens and hires employees based on capabilities and potential, and we plan to continue the implementation of these practices in 2023. In the last year, we conducted an anonymous hiring pilot to identify and remove any potential for bias from our hiring process and broaden our diverse talent pool and tested technology to make sure that job descriptions utilize inclusive language. We also deliver unconscious bias training to leaders equipping them to lead inclusively and identify unconscious bias.

Developing our talent is key to helping us reach our business goals and retaining our people. We foster an environment of continuous learning through initiatives like our annual Career Month with virtual events, on-demand learning and resources to help employees create a Career Success Statement and Development Map so that they can chart their career journey and track their progress. We are investing in leadership development through our flagship program Leader Essentials to help people at all levels cultivate skills such as effective communication, creating an inclusive culture and building effective relationships. We also continue to develop the next generation of talent with our New College Grad program.

Ongoing engagement is a keystone to our people strategy. We believe that listening is crucial to identifying opportunities to strengthen employee engagement as well as influencing our overall strategy. In 2022, we had an overall employee survey participation rate of 90%. Key strengths that employees identified were that they felt that their work was meaningful, they are excited about our future, and they would recommend their manager to others. We also engage employees by taking actions to promote and ground them in our core values and beliefs as a company, so that we are conducting business in an ethical way. As a result of this focus, in 2022, we were named one of the World's Most Ethical Companies by Ethisphere Institute for the fourth consecutive year. Our employees also regularly engage in a wide range of hands-on volunteering and matching campaigns that support the communities in which they work and live.

Health and Safety

We are committed to creating a safe work environment everywhere we operate. We provide extensive health and safety resources and training to all of our employees, especially for those who work in our manufacturing and operations. We use an integrated management system to manage health and safety standards at our manufacturing facilities.

Furthermore, in response to the ongoing COVID-19 pandemic, we continue to practice our global resiliency plans, which have allowed us to maintain 24/7 operations. At each global Western Digital site, we have local, cross-functional teams responsible for our efforts to meet or exceed local COVID regulations, including providing real-time data to leaders, implementing changes to our physical workplaces and providing robust employee and family benefits to those impacted by COVID. We have welcomed employees who transitioned to working from home during the pandemic back to the office and have offered a flexible hybrid work model for certain employees.

Government Regulation

Our worldwide business activities are subject to various laws, rules, and regulations of the United States as well as of foreign governments. Compliance with these laws, rules, and regulations has not had a material effect upon our capital expenditures, results of operations, or competitive position. Nevertheless, compliance with existing or future governmental regulations, including, but not limited to, those pertaining to global trade, the environment, consumer and data protection, employee health and safety, and taxes, could have a material impact on our business in subsequent periods. See Part I, Item 1A, *Risk Factors* for a discussion of these potential impacts.

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 work to minimize our impacts on the environment through emissions reduction targets and other initiatives and to evaluate and enhance our climate resiliency.
- 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.westerndigital.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.westerndigital.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 can be affected by a number of risks and uncertainties, which could cause material harm to our actual operating results and financial condition. The risks discussed below are not the only ones facing our business but represent risks that we believe are material to us. Additional risks not presently known to us or that we currently deem immaterial may also negatively affect our business.

OPERATIONAL RISKS

Adverse global or regional conditions could harm our business.

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 depends 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, recession, inflation, rising interest rates, slower growth in certain geographic regions, political uncertainty, geopolitical tensions or conflicts, other macroeconomic factors, changes to social conditions and regulations, could significantly harm demand for our products, increase credit and collectability risks, result in revenue reductions, reduce profitability as a result of underutilization of our assets, cause us to change our business practices, increase manufacturing and operating costs or result in impairment charges or other expenses.

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

- obtaining governmental approvals and compliance with evolving foreign 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;
- exchange, currency and tax controls and reallocations;
- weaker protection of IP rights;
- trade restrictions, such as export controls, export bans, import restrictions, embargoes, sanctions, license and certification requirements (including semiconductor, encryption and other technology), tariffs and complex customs regulations; and
- difficulties in managing international operations, including appropriate internal controls.

As a result of these risks, our business could be harmed.

Public health crises, including the COVID-19 pandemic, have had, and could in the future have, a negative effect on our business.

The COVID-19 pandemic has impacted and may continue to impact our workforce and operations, and those of our strategic partners, customers, suppliers and logistics providers. These impacts include under-absorbed overhead, increased logistics, component and other costs, decreased demand for our products and manufacturing challenges. While our manufacturing facilities and those used by Flash Ventures are all currently operational, we have experienced and may experience in the future temporary closures of certain manufacturing facilities related to the pandemic. Future outbreaks of infectious disease or other public health crises may have a similar impact.

The effects of such health crises, including the COVID-19 pandemic, are uncertain and difficult to predict, but may include:

- Disruptions to our supply chain, our operations or those of our strategic partners, customers or suppliers caused by employees or others contracting infectious diseases, or governmental orders to contain the spread of infectious disease, such as travel restrictions, quarantines, shelter in place orders, trade controls and business shut-downs;
- Deterioration of worldwide credit markets that may limit our ability or increase our cost to obtain external financing to fund our operations and capital expenditures and result in a higher rate of losses on our accounts receivables due to customer credit defaults;
- Extreme volatility in financial markets, which may harm our ability to access the financial markets on acceptable terms;

- Increased data security and technology risk as some employees continue to work from home, including possible outages to systems and technologies critical to remote work and increased data privacy risk with cybercriminals attempting to take advantage of the disruption; and
- Reduced productivity or other disruptions of our operations if workers in our factories or our other worksites are exposed to or spread infectious diseases to other employees.

The degree to which the COVID-19 pandemic or future public health crises ultimately impact our business will depend on many factors beyond our control, which are highly uncertain and cannot be predicted at this time.

We are dependent on a limited number of qualified suppliers who provide critical services, materials or components, and a disruption in our supply chain could negatively affect our business.

We depend on an external supply base for technologies, software (including firmware), preamps, controllers, dynamic random-access memory, 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 worldwide just-in-time hubs and distribution centers and to meet our freight needs. Many of the components and much of the equipment we acquire must be specifically designed for use in our products or for developing and manufacturing our products, and are only available from a limited number of suppliers, some of whom are our sole-source suppliers. We therefore depend on these suppliers to meet our business needs including dedicating adequate engineering resources to develop components that can be successfully integrated into our products.

Our suppliers have in the past been, and may in the future be, unable or unwilling to meet our requirements, including as a result of events outside of their control such as trade restrictions (including tariffs, quotas and embargoes), geopolitical conflicts, public health emergencies, or natural disasters. 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, disruptions in supplier relationships 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 business. Delays, shortages 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 business.

We do not have long-term contracts with some of our existing suppliers, nor do we always have guaranteed manufacturing capacity with our suppliers, so we cannot guarantee that they will devote sufficient resources or capacity to manufacturing our products. Any significant problems that occur at our suppliers could lead to product shortages or quality assurance problems. When we do have contractual commitments with suppliers in an effort to stabilize the supply of our components, those commitments may require us to buy a substantial number of components or make significant cash advances to the supplier and may not result in a satisfactory supply of our components.

In addition, our supply base has experienced industry consolidation. Our suppliers may be acquired by our competitors, decide to exit the industry, or redirect their investments and increase costs to us. 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 increased. 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.

Our operations, and those of certain of our suppliers and customers, are subject to substantial risk of damage or disruption.

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. If a fire (including a climate change-related fire), flood, earthquake, tsunami or other natural disaster, condition or event such as a power outage, contamination event, terrorist attack, cybersecurity incident, physical security breach, political instability, civil unrest, localized labor unrest or other employment issues, or a health epidemic negatively affects any of these facilities, it would significantly affect our ability to manufacture or sell our products and source components and harm our business. Possible impacts include work and equipment stoppages and damage to or closure of our

facilities, or those of our suppliers or customers, for an indefinite period of time. Climate change has in the past and is expected to continue to increase the incidence and severity of certain natural disasters. In addition, the geographic concentration of our manufacturing sites could exacerbate the negative impacts resulting from any of these problems.

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 damage to our facilities, as these types of insurance are sometimes not available or available only at a prohibitive cost. Climate change may reduce the availability and/or increase the cost of certain types of insurance by contributing to an increase in the incidence and severity of certain natural disasters. We depend upon Kioxia to obtain and maintain sufficient property, business interruption and other insurance for Flash Ventures. If Kioxia fails to do so, we could suffer significant unreimbursable losses, and such failure could also cause Flash Ventures to breach various financing covenants.

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. Changes in our key management team can result in loss of continuity, loss of accumulated knowledge, departure of other key employees, disruptions to our operations and inefficiency during transitional periods. Global competition for skilled employees in the technology 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. Additionally, uncertainty about the structure and organization of our business as a result of our ongoing strategic review could negatively impact our ability to recruit and retain key staff and skilled employees. Changes in immigration policies may also impair our ability to recruit and hire technical and professional talent.

Our employee hiring and retention also depend on our ability to build and maintain a diverse and inclusive workplace culture and be viewed as an employer of choice. 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. If we are unable to hire and retain key management, staff or skilled employees, our operating results would likely be harmed.

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 business could be negatively impacted.

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 obtain in the future, access to our computer systems and networks, including cloud-based platforms. The technology infrastructure and systems of some 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 ransomware, computer denial-of-service attacks, worms, and other malicious software programs or other attacks, and covert introduction of malware to computers and networks, including those using techniques that change frequently or may be disguised or difficult to detect, or designed to remain dormant until a triggering event or that may continue undetected for an extended period of time. Cyber attacks may also include impersonation of authorized users, efforts to discover and exploit any design flaws, bugs, security vulnerabilities or security weaknesses, 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 increasingly organized and well-financed or supported by state actors, and are developing increasingly sophisticated systems and means to not only attack systems, but also to evade detection or to obscure their activities. Geopolitical tensions or conflicts may create heightened risk of cyber attacks.

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 of actual or perceived breaches, we could experience additional costs, notification requirements, civil and administrative fines and penalties, indemnification claims, litigation, and damage to our brand and reputation. All of these consequences could harm our reputation and our business and materially and negatively impact our operating results and financial condition.

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 ODM customers. Our business liability insurance may be inadequate or future coverage may be unavailable on acceptable terms, which could negatively 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 provisions 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, they could harm our business.

BUSINESS AND STRATEGIC RISKS

Our review of potential strategic alternatives may not result in an executed or consummated transaction or other strategic alternative, and the process of reviewing strategic alternatives or its conclusion could adversely affect our business and our stockholders.

In June 2022, we announced that we are reviewing potential strategic alternatives aimed at further optimizing long-term value for our stockholders. The potential strategic alternatives include, among other things, the option to separate our Flash and HDD business units. In conjunction with that review process, the Company announced that it had entered into a letter agreement with Elliott Investment Management L.P. (“Elliott”), which had disclosed in May 2022 a \$1 billion investment in our Company and called for a full strategic review of our business. We are actively working with financial advisors and the Company’s legal counsel in this strategic review process.

Any potential transaction or other strategic alternative would be dependent on a number of factors that may be beyond our control, including, among other things, market conditions, industry trends, regulatory approvals, and the availability of financing for a potential transaction on reasonable terms. The process of reviewing potential strategic alternatives may be time consuming, distracting and disruptive to our business operations, which may cause concern to our current or potential customers, employees, investors, strategic partners and other constituencies and may have a material impact on our business and operating results and/or result in increased volatility in our share price. We have and will continue to incur substantial

expenses associated with identifying, evaluating and negotiating potential strategic alternatives. There can be no assurance that any potential transaction or other strategic alternative, if consummated, will provide greater value to our stockholders than that reflected in the current price of our common stock. Until the review process is concluded, perceived uncertainties related to our future may result in the loss of potential business opportunities and volatility in the market price of our common stock and may make it more difficult for us to attract and retain qualified personnel and business partners. Similarly, other activist investors may engage in proxy solicitations or advance shareholder proposals, or otherwise attempt to affect changes and assert influence on our Board and management, which could lead to the impacts on our business, board, management and employees discussed above.

We rely substantially on strategic relationships with various partners, including Kioxia, which subjects us to risks and uncertainties that could harm our business.

We have entered into and expect to continue to enter into strategic relationships with various partners for product development, manufacturing, sales growth and the supply of technologies, components, equipment and materials for use in our product design and manufacturing, including our business ventures with Kioxia. We depend on Flash Ventures for the development and manufacture of flash-based memory. Our strategic relationships, including Flash Ventures, are 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 and makes our financial results particularly susceptible to variations from our forecasts and expectations. A failure to accurately forecast supply and 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. We are contractually obligated to pay for 50% of the fixed costs of Flash Ventures regardless of whether we order any flash-based memory, and our orders placed with Flash Ventures on a three-month rolling basis are binding. On the other hand, if we under-invest in Flash Ventures, or otherwise grow or transition Flash Ventures' capacity too slowly, we may not have enough supply of flash-based memory, or the right type of flash-based memory, 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 might make strategic decisions with respect to the allocation of our supply among our products and customers, which could result in less favorable gross margins or damage customer relationships.

Our control over the operations of our business ventures may be limited, and our interests could diverge from our strategic partners' interests regarding ongoing and future activities. For example, under the Flash Ventures agreements, we cannot unilaterally direct most of Flash Ventures' activities, and we have limited ability to source or fabricate flash outside of Flash Ventures. Flash Ventures requires significant investments by both Kioxia and us for technology transitions and capacity expansions, and our business could be harmed if our technology roadmap and investment plans are not sufficiently aligned with Kioxia's. Lack of alignment with Kioxia with respect to Flash Ventures could negatively impact our ability to stay at the forefront of technological advancement. Misalignment could arise due to changes in Kioxia's strategic priorities, management, ownership and/or access to capital, which have changed in recent years and could continue to change. Kioxia's stakeholders may include, or have included in the past, competitors, customers, a private equity firm, government entities and/or public stockholders. Kioxia's management changes, ownership and capital structure could lead to delays in decision-making, disputes or changes in strategic direction that could negatively impact the strategic partnership, and therefore us. There may exist conflicts of interest between Kioxia'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.

Together with Kioxia, we fund a portion of the investments required for Flash Ventures through lease financings. Continued availability of lease financings for Flash Ventures is not guaranteed and could be limited by several factors, including our and/or Kioxia's financial performance and changes to our and/or Kioxia's business, ownership or corporate structure. To the extent that lease financings are not accessible on favorable terms or at all, more cash would be required to fund investments.

Our strategic relationships are subject to additional risks that could harm our business, including, but not limited to, the following:

- failure by our strategic partners to comply with applicable laws;

- difficulties and delays in product and technology development at, ramping production at, and transferring technology to, our strategic partners;
- failure by our strategic partners to timely fund capital investments with us or otherwise meet their commitments, including paying amounts owed to us or third parties when due;
- we may lose the rights to, or ability to independently manufacture, certain technology or products being developed or manufactured by strategic partners, including if any of them is acquired by another company, files for bankruptcy or experiences financial or other losses;
- a bankruptcy event involving a strategic partner could result in structural changes to and/or termination of the strategic partnership; and
- changes in tax or regulatory requirements may necessitate changes to the agreements governing our strategic partnerships.

We participate in a highly competitive industry that is subject to declining average selling prices (“ASPs”), volatile demand, rapid technological change and industry consolidation, as well as lengthy product qualifications, all of which could negatively impact our business.

Demand for our devices, software and solutions, which we refer to in this Item 1A as our “products”, depends in large part on the demand for systems 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 harm 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 negative 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 to lower 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, which could enhance the resources and lower the cost structure of some competitors. These factors could result in a substantial decrease in our market share and harm our business.

As we compete in new product areas, the overall complexity of our business may increase 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 with uncertain results. Some of our competitors offer products that we do not offer, which may allow them 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 our competitors may be able to gain a product offering or cost structure advantage over us, which would harm our business. Further, our competitors may utilize 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 benefiting from governmental investments and may be subject to increased complexity and reduced efficiency in our supply chain as a result of governmental efforts to promote domestic semiconductor industries in various jurisdictions.

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

The markets for our products continuously undergo technology transitions that we must anticipate to adapt our existing products or develop new products effectively. If we fail to implement new technologies or develop new products desired by our customers quickly and cost-effectively, our business may be harmed.

In addition, the success of our technology transitions and product development 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 (including requests for more efficient and efficiently-produced products with reduced environmental impacts) 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 depend on our ability to enter into favorable supply agreements. 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 products could substitute for our current products and make them obsolete. We also develop products to meet certain industry and technical standards, which may change and cause us to incur substantial costs as we adapt to new standards or invest in different manufacturing processes to remain competitive.

We experience sales seasonality and cyclicity, which could cause our operating results to fluctuate. In addition, accurately forecasting demand has become more difficult, which could harm our business.

Sales of many of our products tend to be seasonal and subject to supply-demand cycles. 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. Changes in the product or channel mix of our business can also impact seasonal and cyclical patterns. For example, 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 each quarter. As a result of the above or other factors, our forecast of financial results for a given quarter may differ materially from our actual financial results.

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, end market dynamics and industry consolidation, resulting in less availability of historical market data for certain product segments. Further, for many of our OEM customers 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 negatively 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.

Failure to successfully execute on strategic initiatives including acquisitions, divestitures or cost saving measures may negatively impact our future results.

We have made and expect to continue to make acquisitions and divestitures, and engage in cost saving measures. 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 and integration of processes and systems. 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 have been and may continue to be difficulties with implementing new systems and processes or with integrating systems and processes of companies with complex operations, which can 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 negatively 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 stockholders as well as earn-out or other contingent consideration payments 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 negatively affect our business. 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.

Cost saving measures, restructurings and divestitures 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.

Loss of revenue from a key customer, or consolidation among our customer base, could harm our operating results.

Historically, nearly one half of our total 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 sales to or orders 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 have impacted, and may in the future impact, our operating results and financial condition. Further, government authorities may implement laws or regulations or take other actions that could result in significant changes to the business or operating models of our customers. Such changes could negatively impact our operating results.

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 negatively impact 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 cloud storage and computing platforms, 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 negatively impact 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.

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 business 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. As a result of the shift to mobile devices, 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 business could suffer. Additionally, if the distribution market weakens as a result of 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 negatively impacted. Negative changes in the creditworthiness 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, negative 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. Further, changes to the retail environment, such as store closures caused by macroeconomic conditions or changing customer preferences, may reduce the demand for our products. 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 negatively impacted.

FINANCIAL RISKS

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

We utilize debt financing in our capital structure and may incur additional debt, including under our revolving credit facility, subject to customary conditions in our loan agreement. Our 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) consolidate or merge with or into, or sell all or substantially all of our assets to, another person; (ii) enter into sale/leaseback transactions; (iii) incur additional indebtedness and (iv) incur liens 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 our debt service obligations, comply with our debt covenants and deleverage depends on our cash flows and financial performance, which are affected by financial, business, economic and other factors. The rate at which we will be able to or choose to deleverage is uncertain. 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 harm our business. 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.

We also guarantee a significant amount of lease obligations of Flash Ventures owed to third parties. 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 Kioxia. Some of the lease obligations are guaranteed in full by us. The leases are subject to customary covenants and cancellation events that relate to Flash Ventures and each of the guarantors. 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.

We may from time to time seek to further refinance our substantial indebtedness by issuing additional shares of common stock or other securities that are convertible into common stock or grant the holder the right to purchase common stock, each of which may dilute our existing stockholders, 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, including cash movements, could increase our worldwide effective tax rate and harm our business. Beginning in our fiscal year 2023, the Tax Cuts and Jobs Act of 2017 eliminates the option to deduct research and development expenditures in the year incurred, requiring amortization in accordance with IRC Section 174. If this requirement is not repealed or otherwise modified, it will materially increase our effective tax rate and reduce our operating cash flows. 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 I, Item 1, Note 14, 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. 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 harm our business.

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. When such events occur, they have had, and may in the future have, a negative impact on our business.

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 negatively 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 may actually 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, 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. Our customers' credit risk may also be exacerbated by an economic downturn or other adverse global or regional economic conditions. 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.

LEGAL AND COMPLIANCE RISKS

We are subject to laws, rules, and regulations relating to the collection, use, sharing, and security of 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 and privacy 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 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. Laws and regulations relating to the collection, use, security and privacy of third-party data change over time and new laws and regulations become effective from time to time. We are subject to notice and privacy policy requirements, as well as obligations to respond to requests to know and access personal information, correct personal information, delete personal information and say no to the sale of personal information. 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. We may also be subject to restrictions on cross-border data transfers and requirements for localized storage of data that could increase our compliance costs and risks and affect the ability of our global operations to coordinate activities and respond to customers. 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 state, federal and international legal and regulatory requirements, such as environmental, labor, health and safety, trade and public-company reporting and disclosure 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 regulations and 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 and safety practices and public-company reporting and disclosures requirements. 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, which could substantially increase the complexity of our public-company reporting and disclosure requirements and our compliance and operating costs. 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 harm our business.

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.

From time to time, 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. 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, affect demand for our products and 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 harm our business.

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.

Our reliance on IP and other proprietary information subjects us to the risk that these key components 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 negatively 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.

The exclusive forum provisions in our Bylaws could limit our stockholders' ability to bring a claim in a judicial forum that it finds favorable for disputes with the Company or its directors, officers or other employees.

Our Bylaws provide that, unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware is the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action or proceeding asserting a claim of breach of a fiduciary duty owed by any current or former director, officer or other employee of the Company or its stockholders, (iii) any action or proceeding asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or the Company's Certificate of Incorporation or Bylaws, or (iv) any action or proceeding asserting a claim governed by the internal affairs doctrine (the "Delaware Exclusive Forum Provision"). Our Bylaws further provide that the federal district courts of the United States of America will, to the fullest extent permitted by law, be the exclusive forum for resolving any complaint asserting a cause of action under the Securities Act of 1933, as amended (the "Federal Forum Provision").

The Delaware Exclusive Forum Provision is intended to apply to claims arising under Delaware state law and would not apply to claims brought pursuant to the Exchange Act or the Securities Act, or any other claim for which the federal courts have exclusive jurisdiction. In addition, the Federal Forum Provision is intended to apply to claims arising under the Securities Act and would not apply to claims brought pursuant to the Exchange Act. The exclusive forum provisions in the Company's Bylaws will not relieve us of our duties to comply with the federal securities laws and the rules and regulations thereunder and, accordingly, actions by our stockholders to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder must be brought in federal courts. Our stockholders will not be deemed to have waived our compliance with these laws, rules and regulations.

The exclusive forum provisions in the Company's Bylaws may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with the company or its directors, officers or other employees, which may discourage lawsuits against the Company and its directors, officers and other employees. In addition, stockholders who do bring a claim in the Court of Chancery of the State of Delaware pursuant to the Delaware Exclusive Forum Provision could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near Delaware. The court in the designated forum under our exclusive forum provisions may also reach different judgments or results than would other courts, including courts where a stockholder would otherwise choose to bring the action, and such judgments or results may be more favorable to the Company than to our stockholders. Further, the enforceability of similar exclusive forum provisions in other companies' organizational documents has been challenged in legal proceedings, and it is possible that a court could find any of our exclusive forum provisions to be inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings. If a court were to find all or any part of our exclusive forum provisions to be inapplicable or unenforceable in an action, we might incur additional costs associated with resolving such action in other jurisdictions.

Item 1B. *Unresolved Staff Comments*

Not applicable.

Item 2. Properties

Our principal executive offices are located in San Jose, California. Our leased facilities have contracts expiring at various times through 2034. Our principal manufacturing, R&D, marketing and administrative facilities as of July 1, 2022 were as follows:

Location	Buildings Owned or Leased	Approximate Square Footage	Description
United States			
California			
Fremont	Leased	290,000	HDD manufacturing of head wafers and R&D
Irvine	Leased	431,000	HDD R&D, administrative, marketing and sales
Milpitas	Owned	589,000	Flash R&D, marketing and sales, and administrative
San Jose	Owned	2,275,000	Manufacturing of head wafers, head, media and product development, R&D for Flash and HDD, administrative, marketing and sales
Colorado			
Longmont	Leased	87,000	Flash R&D
Colorado Springs	Leased	59,000	HDD R&D
Minnesota			
Rochester	Leased	156,000	Flash and HDD product development
Asia			
China			
Shanghai	Owned	914,000	Flash assembly and test of SSD
Shenzhen	Owned and Leased	563,000	HDD manufacturing of media
Japan			
Fujisawa	Owned	661,000	HDD product development
Malaysia			
Johor	Owned	277,000	HDD manufacturing of substrates
Kuala Lumpur	Owned	145,000	HDD R&D and administrative
Kuching	Owned	285,000	HDD manufacturing and development of substrates
Penang	Owned	1,889,000	Assembly and test of SSD, manufacturing of media, and R&D for Flash and HDD
Philippines			
Laguna	Owned	632,000	HDD manufacturing of HGAs and slider fabrication
Thailand			
Bang Pa-In	Owned and Leased	1,595,000	HDD slider fabrication, manufacturing of HDDs and HGAs, and R&D
Prachinburi	Owned	1,568,000	HDD manufacturing
India			
Bangalore	Owned and Leased	1,261,000	Flash R&D and administrative
Middle East			
Israel			
Kfar Saba	Owned	167,000	Flash R&D
Tefen	Owned	64,000	Flash R&D

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 update 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 12 to 24 months should we require such additional facilities.

Substantially all of our flash-based memory wafers are manufactured by Kioxia in purpose-built, wafer fabrication facilities located in Yokkaichi and Kitakami, Japan.

Item 3. *Legal Proceedings*

See Part II, Item 8, Note 14, *Income Tax Expense*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for disclosures regarding statutory notices of deficiency issued by the Internal Revenue Service (“IRS”) in June 2018 and December 2018, petitions filed by the Company with the U.S. Tax Court in September 2018 and March 2019, additional penalties asserted by the IRS in March 2021 and further Amendments to Answers filed by the IRS in June 2021 and January 2022, and a tentative resolution with respect to such matters.

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 11, 2022 was 874.

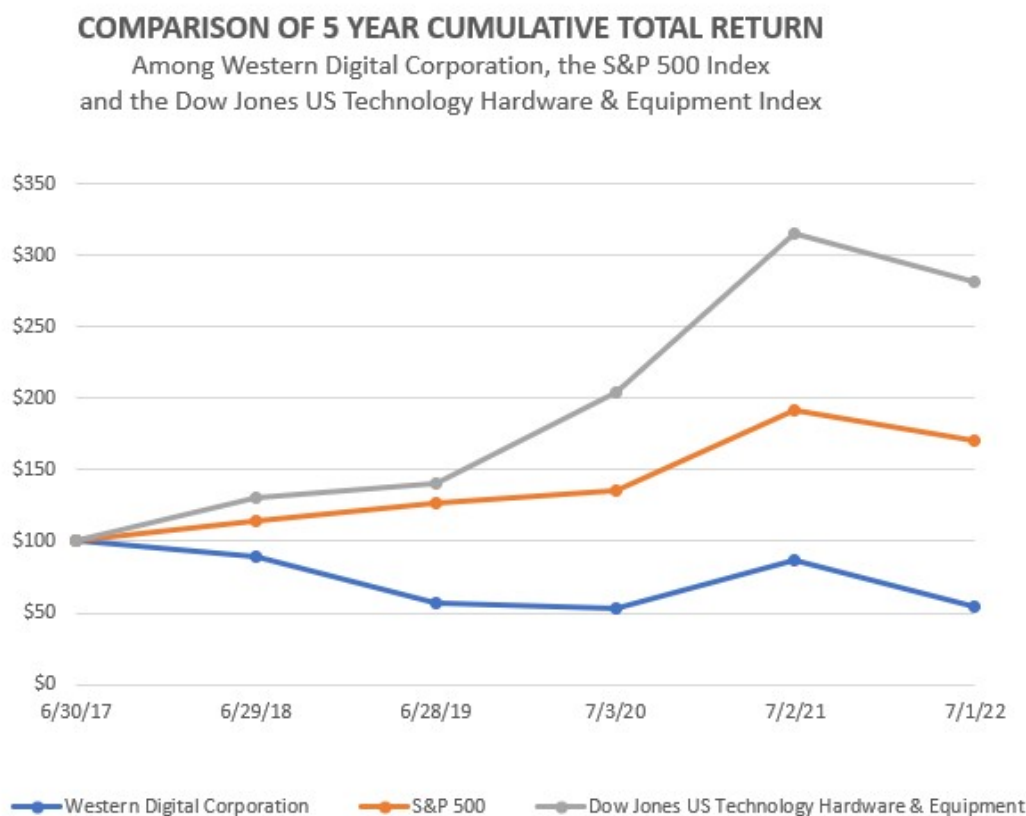
Dividends

In April 2020, we suspended our quarterly cash dividend. For more information about our dividend policy, see Part II, Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations - Short and Long-term Liquidity*.

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 July 1, 2022. The graph assumes that \$100 was invested in our common stock at the close of market on June 30, 2017 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 at market close on June 30, 2017)



Total Return Analysis

	June 30, 2017	June 29, 2018	June 28, 2019	July 3, 2020	July 2, 2021	July 1, 2022
Western Digital Corporation	\$ 100.00	\$ 89.48	\$ 57.44	\$ 52.78	\$ 87.32	\$ 54.00
S&P 500 Index	\$ 100.00	\$ 114.37	\$ 126.29	\$ 135.77	\$ 191.15	\$ 170.86
Dow Jones U.S. Technology Hardware & Equipment Index	\$ 100.00	\$ 130.26	\$ 140.45	\$ 204.31	\$ 315.74	\$ 281.89

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. *[Reserved]*

[Reserved]

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

The following discussion and analysis contains forward-looking statements within the meaning of the federal securities laws, and should be read in conjunction with the disclosures we make concerning risks and other factors that may affect our business and operating results. You should read this information in conjunction with the Consolidated Financial Statements and the notes thereto included in Part II, Item 8 of this Annual Report on Form 10-K. See also "Forward-Looking Statements" immediately prior to Part I, Item 1 of this Annual Report on Form 10-K.

Our Company

We are on a mission to unlock the potential of data by harnessing the possibility to use it. We are a leading developer, manufacturer, and provider of data storage devices based on both flash-based products ("Flash") and hard disk drives ("HDD") technologies. With dedicated business units driving advancements in NAND flash and magnetic recording technologies, we create and drive innovations needed to help customers capture, preserve, access, and transform an ever-increasing diversity of data.

Our broad portfolio of technology and products address multiple end markets. In 2022, we refined the end markets we report to be "Cloud", "Client" and "Consumer". Cloud represents a large and growing end market comprised primarily of products for public or private cloud environments and enterprise customers, which we believe we are uniquely positioned to address as the only provider of both Flash and HDD. Through the Client end market, we provide our original equipment manufacturer ("OEM") and channel customers a broad array of high-performance flash and hard drive solutions across personal computer, mobile, gaming, automotive, virtual reality headsets, at-home entertainment, and industrial spaces. The Consumer end market is highlighted by our broad range of retail and other end-user products, which capitalize on the strength of our product brand recognition and vast points of presence around the world.

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 2022 and 2021, which ended on July 1, 2022 and July 2, 2021, respectively, are comprised of 52 weeks, with all quarters presented consisting of 13 weeks. Fiscal year 2020, which ended on July 3, 2020, was comprised of 53 weeks, with the first quarter consisting of 14 weeks and the remaining quarters consisting of 13 weeks each.

Key Developments

Business Structure and Strategic Alternatives

In 2021, we made and announced the decision to reorganize our business by forming two separate product business units: Flash and HDD. The new structure is intended to provide each business unit with focus and responsibility for identifying current and future customer requirements while driving the strategy, roadmap, pricing and overall profitability for their respective product areas. To align with the new operating model and business structure, we made management organizational changes and implemented new reporting modules and processes to provide discrete information to manage the business. Effective July 3, 2021, management finalized its assessment of our operating segments and concluded that we now have two reportable segments: Flash and HDD.

In June 2022, we announced that we are reviewing potential strategic alternatives aimed at further optimizing long-term value for stockholders. The Executive Committee of our Board of Directors is overseeing the assessment process and evaluating a range of alternatives, including options for separating our Flash and HDD business units. In conjunction with that review process, we announced that we had entered into a letter agreement with Elliott Investment Management L.P. ("Elliott"), which had disclosed in May 2022 a \$1 billion investment in our Company and called for a full strategic review of our business. We are actively working with financial advisors and our legal counsel in this strategic review process.

Tax Resolution

As previously disclosed, we have received statutory notices of deficiency and notices of proposed adjustments from the Internal Revenue Service ("IRS") with respect to 2008 through 2015. During 2022, new information became available which required us to re-measure our unrecognized tax benefits for this IRS matter. We and the IRS tentatively reached a settlement for resolving this matter. Additional information is provided in our discussion of Income tax expense in our results of operations below, as well as in Part I, Item 1, Note 14, *Income Tax Expense*, of the Notes to the Consolidated Financial Statements, and in the "Short- and Long-Term Liquidity-Unrecognized Tax Benefits" section below.

Flash Ventures Contamination Incident

In February 2022, contamination of certain material used in manufacturing processes occurred at Flash Ventures' fabrication facilities in both Yokkaichi and Kitakami, Japan which resulted in damage to inventory units in production, a temporary disruption to production operations and a reduction in our flash wafer availability. During 2022, we incurred charges of \$207 million related to this contamination incident that were recorded in cost of revenue and primarily consisted of scrapped inventory and rework costs, decontamination and other costs needed to restore the facilities to normal capacity, and under absorption of overhead costs. We are evaluating potential options for recovery.

Financing Activities

During 2022, we continued to execute on our commitment to reduce our overall debt levels and Fitch Ratings, Inc. raised our Company credit rating to investment grade in December 2021. We fully repaid our Term Loan B-4 in October 2021 and shortly thereafter initiated a series of transactions to further reduce our debt levels and better stagger the maturities of our debt. In December 2021, we issued \$500 million aggregate principal amount of 2.850% senior unsecured notes due February 1, 2029 (the "2029 Notes") and we issued \$500 million aggregate principal amount of 3.100% senior unsecured notes due February 1, 2032 (the "2032 Notes"). We used the proceeds from these note offerings and available cash to voluntarily repay \$1.21 billion of our Term Loan A-1 and reduce the principal amount to \$3.0 billion as of December 31, 2021. In January 2022, we amended and restated our existing loan agreement to provide for, among other things: (i) the issuance of a new \$3.0 billion Term Loan A-2 maturing in January 2027 to replace our previously existing Term Loan A-1; (ii) the availability of a new \$2.25 billion revolving credit facility maturing in January 2027 to replace our previously existing \$2.25 billion revolving credit facility; and (iii) additional covenant flexibility and other modifications. As of July 1, 2022, over 80% of the principal amount of our debt is now due in 2026 or later. We believe this new debt structure gives us greater financial stability and flexibility to manage our business over the longer term.

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

New Flash Ventures Fabrication Facility

In January 2022, we entered into additional agreements regarding Flash Ventures' investment in a new wafer fabrication facility currently under construction in Yokkaichi, Japan, referred to as "Y7". The primary purpose of Y7 is to provide clean room space to continue the transition of existing flash-based wafer capacity to newer flash technology nodes. The first phase of construction of Y7 is complete and output is expected to commence in the first half of 2023. We are committed to pay, among other items, future building depreciation prepayments of approximately \$268 million in 2023 and \$22 million in 2024, to be credited against future wafer charges.

COVID-19 Pandemic and Operational Update

As the ongoing COVID-19 pandemic has evolved, we have implemented and maintained more thorough sanitation practices as outlined by health organizations and supported vaccination efforts. We continually monitor and update our practices based on recommendations from health organizations to ensure the continued safety of our employees and business partners. In addition, the responses to COVID-19 taken by others in the supply chain have contributed to the increases in the costs of their services, which have in turn impacted our operations. We incurred incremental charges primarily related to logistics, absorption, and other factory-related costs of approximately \$248 million and \$127 million, during 2022 and 2021, respectively, which were recorded in Cost of revenue.

The technology hardware and semiconductor industries faced supply chain disruptions and component shortages during 2022, which negatively impacted both our customers' ability to ship products and our ability to build products. In order to meet our end customers' demand, we are incurring increased component costs, which primarily impacted our hard drive gross margins in 2022. Additionally, the global economy has recently experienced significant volatility and disruptions impacted by increases in inflation rates, Russia's invasion of Ukraine and rising fuel prices, rising interest rates, declines in consumer confidence, declines in economic growth, and uncertainty about economic stability. We are seeing our PC OEM customers aggressively right-size their inventory to reflect current demand conditions, which will impact our business in this market in the second half of the calendar year. While we ultimately expect that the impact of these conditions will be transitory, the severity and duration of the impact of these conditions on our business is dynamic and cannot be predicted.

We believe we have made significant progress in strengthening our product portfolio to meet our customers' growing and evolving storage needs. Our BiCS5 based products continue to play a significant role in driving top line results across our end markets as we move further along the product roadmap. Additionally, OptiNAND and shingled magnetic recording ("SMR") technologies are progressing as planned as we have commenced commercial shipments on a number of OptiNand-based products and are undergoing qualifications of our latest 26-terabyte SMR drive. For our next generation 3D-flash technology, we continued commercial shipment of consumer flash devices based on our 162-layer BiCS6 technology as we expect to start ramping the technology towards the end of calendar year 2022. We are also aware of the ongoing trends in the HDD Client market as PCs shift from using HDD to Flash technology. As a result, we have and are still undergoing actions to restructure our HDD manufacturing footprint to reflect this market dynamic.

We will continue to actively monitor these situations and may take further actions altering our business operations that we determine are in the best interests of our employees, customers, partners, suppliers, and stakeholders, or as required by federal, state, or local authorities. See Part I, Item 1A, *Risk Factors*, of this Annual Report on Form 10-K for more information regarding the risks we face as a result of the COVID-19 pandemic, supply chain disruptions and current macroeconomic conditions.

Russia Sanctions

In February 2022, the U.S. and other countries imposed sanctions on Russia. In accordance with these sanctions, we have ceased shipments to distributors for customers located in Russia. Our revenue from distributors for customers in Russia have not been significant. We have no material assets or operations in Russia.

Results of Operations

Summary Comparison of 2022, 2021 and 2020

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⁾:

	2022		2021		2020	
	<i>(in millions, except percentages)</i>					
Revenue, net	\$ 18,793	100.0 %	\$ 16,922	100.0 %	\$ 16,736	100.0 %
Cost of revenue	12,919	68.7	12,401	73.3	12,955	77.4
Gross profit	5,874	31.3	4,521	26.7	3,781	22.6
Operating Expenses:						
Research and development	2,323	12.4	2,243	13.3	2,261	13.5
Selling, general and administrative	1,117	5.9	1,105	6.5	1,153	6.9
Employee termination, asset impairment, and other charges	43	0.2	(47)	(0.3)	32	0.2
Total operating expenses	3,483	18.5	3,301	19.5	3,446	20.6
Operating income	2,391	12.7	1,220	7.2	335	2.0
Interest and other income (expense):						
Interest income	6	—	7	—	28	0.2
Interest expense	(304)	(1.6)	(326)	(1.9)	(413)	(2.5)
Other income, net	30	0.2	26	0.2	4	—
Total interest and other expense, net	(268)	(1.4)	(293)	(1.7)	(381)	(2.3)
Income (loss) before taxes	2,123	11.3	927	5.5	(46)	(0.3)
Income tax expense	623	3.3	106	0.6	204	1.2
Net income (loss)	\$ 1,500	8.0 %	\$ 821	4.9 %	\$ (250)	(1.5)%

Percentages may not total due to rounding.

The following table sets forth, for the periods presented, a summary of our segment information:

	2022	2021	2020
	<i>(in millions, except percentages)</i>		
Net revenue:			
Flash	\$ 9,753	\$ 8,706	\$ 7,769
HDD	9,040	8,216	8,967
Total net revenue	<u>\$ 18,793</u>	<u>\$ 16,922</u>	<u>\$ 16,736</u>
Gross profit:			
Flash	\$ 3,527	\$ 2,611	\$ 1,903
HDD	2,661	2,221	2,602
Unallocated corporate items:			
Amortization of acquired intangible assets	(66)	(331)	(610)
Stock-based compensation expense	(48)	(55)	(51)
Contamination related charges	(207)	—	—
Recoveries from a power outage incident	7	75	(68)
Other	—	—	5
Total unallocated corporate items	<u>(314)</u>	<u>(311)</u>	<u>(724)</u>
Consolidated gross profit	<u>\$ 5,874</u>	<u>\$ 4,521</u>	<u>\$ 3,781</u>
Gross margin:			
Flash	36.2%	30.0%	24.5%
HDD	29.4%	27.0%	29.0%
Consolidated gross margin	31.3%	26.7%	22.6%

The following table sets forth, for the periods presented, summary information regarding our disaggregated revenue:

	2022	2021	2020
	<i>(in millions)</i>		
Revenue by End Market			
Cloud	\$ 8,017	\$ 5,723	\$ 7,018
Client	7,076	7,281	6,335
Consumer	3,700	3,918	3,383
Total Revenue	<u>\$ 18,793</u>	<u>\$ 16,922</u>	<u>\$ 16,736</u>
Revenue by Geography			
Asia	\$ 10,054	\$ 9,455	\$ 8,366
Americas	5,867	4,406	5,444
Europe, Middle East and Africa	2,872	3,061	2,926
Total Revenue	<u>\$ 18,793</u>	<u>\$ 16,922</u>	<u>\$ 16,736</u>
Exabytes Shipped	645	541	518

Net Revenue

Net revenue increased 11% in 2022 compared to 2021, which reflects increases in exabytes of Flash and HDD sold as further discussed below. The net revenue increases driven by exabyte growth were partially offset by declines in the average price per gigabyte of storage for both Flash and HDD as product mix shifted to more efficient, high-capacity drives.

Despite the temporary disruption to our Flash production from the contamination event at Flash Ventures' fabrication facilities in both Yokkaichi and Kitakami, Japan, Flash revenue increased 12% in 2022 compared to 2021, primarily driven by a 21% increase in exabytes sold, partially offset by a decline in the average price per gigabyte as product mix shifted to more efficient, high-capacity drives. The higher exabytes sold primarily reflected the growth in Cloud and the ramp of our latest BiCS5 flash solutions. Higher volume was also driven by strong demand in gaming along with a growing brand recognition of WD_Black based products in our Consumer market.

HDD revenue increased 10% in 2022, compared to 2021, primarily driven by a 19% increase in exabytes sold, partially offset by a decline in the average price per gigabyte as product mix shifted to more efficient higher-capacity drives. The increase in exabytes sold was due to continued demand for our latest generation energy assisted drives among our public and private cloud customers as discussed below. The increase in Cloud was partly offset by a decline in HDD exabytes sold in our Client and Consumer end markets due to continued pressure in the commercial channel related to component issues impacting our customers' ability to ship product and greater component sourcing constraints within our own operations, and customers transitioning to client SSD.

The increase in Cloud revenue in 2022 compared to 2021 was led by the demand increase for HDD capacity enterprise drives, including growth in our 18-terabyte capacity drives and ramp of our 20-terabyte and 22-terabyte capacity drives. Additionally, revenue from Flash for enterprise SSD applications more than doubled in 2022 compared to 2021. In Client, the decrease in revenue in 2022 compared to 2021, primarily reflected a mid-30% decrease in client HDD revenue, as a result of the supply chain disruptions noted previously, as well as lower shipments of PCs toward the end of 2022, partially offset by an increase in Flash revenue due to the ramp of 5G phones. In Consumer, the decrease in revenues in 2022 compared to 2021 reflected declines in HDD as a result of short-term demand weakness tied to macroeconomic factors, as well as COVID-related measures.

The changes in net revenue by geography in 2022, compared to 2021 are primarily related to growth in Asia driven by the ramp in 5G products as well as routine variations in the mix of business.

For 2022, 2021 and 2020, our top 10 customers accounted for 45%, 39% and 42%, respectively, of our net revenue. For each of 2022, 2021 and 2020, no single customer accounted for 10% or more of our net revenue.

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 2022, 2021 and 2020, these programs represented 17%, 19% and 16%, respectively, of gross revenues, 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 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

Consolidated gross profit increased \$1.35 billion, or 30%, in 2022 compared to 2021, which reflects the increase in revenue in both Flash and HDD, the shift in product mix to more efficient higher-capacity drives, and cost efficiencies as we ramped production on new products, as well as a \$265 million decrease in charges in the current period related to amortization expense on acquired intangible assets, some of which became fully amortized. These improvements were partially offset by the contamination related charges of \$207 million noted above. Consolidated gross margin increased 4.6 percentage points over the prior year with Flash gross margin up 6.2 percentage points and HDD gross margin up 2.4 percentage points, which primarily reflected cost reductions as we ramped production on newer products. Consolidated gross margin also increased as a result of a shift in product mix to higher-margin flash drives.

Operating Expenses

R&D expense increased \$80 million in 2022 compared to 2021 as we continued to invest in new technologies. The primary drivers of the year-over-year change were increases in headcount and annual merit compensation, which accounted for approximately \$30 million of the overall increase, as well as a similarly sized increase in material use due to an increase in projects.

Selling, general and administrative ("SG&A") expense in 2022 was relatively flat compared to 2021 as we tightly managed costs in light of a dynamic macroeconomic environment.

The losses recognized in Employee termination, asset impairment and other charges compared to the gains in the prior year primarily reflect lower gains on the disposal of assets associated with our business realignment activities, partially offset by higher employee termination and other charges associated with our business realignment activities. For additional information regarding employee termination, asset impairment and other charges, see Part II, Item 8, Note 16, *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)

The decreases in total interest and other expense, net in 2022 compared to 2021 primarily reflects a decrease in interest expense resulting from the pay-down of principal on our debt during 2022.

Income Tax Expense

The Tax Cuts and Jobs Act (the “2017 Act”), enacted on December 22, 2017, includes a broad range of tax reform proposals affecting businesses. We completed our accounting for the tax effects of the enactment of the 2017 Act during the second quarter of 2019. However, the U.S. Treasury and the IRS have issued tax guidance on certain provisions of the 2017 Act since the enactment date, and we anticipate the issuance of additional regulatory and interpretive guidance. We applied a reasonable interpretation of the 2017 Act along with the then-available guidance in finalizing our accounting for the tax effects of the 2017 Act. Any additional regulatory or interpretive guidance would constitute new information, which may require further refinements to our estimates in future periods.

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

	2022	2021	2020
	<i>(in millions, except percentages)</i>		
Income (loss) before taxes	\$ 2,123	\$ 927	\$ (46)
Income tax expense	623	106	204
Effective tax rate	29 %	11 %	(443)%

The primary drivers of the difference between the effective tax rate for 2022 and the U.S. Federal statutory rate of 21%, are the relative mix of earnings and losses by jurisdiction, the deduction for foreign derived intangible income, credits, and tax holidays in Malaysia, the Philippines and Thailand that will expire at various dates during years 2024 through 2031. In addition, the effective tax rate for 2022 includes a net increase to the liability for unrecognized tax benefits, which includes interest and offsetting tax benefits, as a result of ongoing discussions with various taxing authorities of \$352 million. This amount includes \$324 million related to the effects of the tentative settlement with the IRS resolving the statutory notices of deficiency and notices of proposed adjustments with respect to 2008 through 2015.

The primary drivers of the difference between the effective tax rate for 2021 and the U.S. Federal statutory rate of 21% are the relative mix of earnings and losses by jurisdiction, the deduction for foreign derived intangible income, credits, and tax holidays in Malaysia, Philippines and Thailand that will expire at various dates during 2021 through 2031.

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. In particular, beginning in 2023, the 2017 Act requires us to capitalize and amortize research and development expenses rather than expensing them in year incurred, which is expected to both materially increase our effective tax rate and materially reduce our operating cash flows, if not repealed or otherwise modified. Our total tax expense in future 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 14, *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 2020, including a comparison of such results of operations to 2021, is included in Part II, Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations*, included in our Annual Report on Form 10-K for the year ended July 2, 2021 filed with the Securities and Exchange Commission on August 27, 2021.

Liquidity and Capital Resources

The following table summarizes our statements of cash flows:

	2022	2021	2020
	<i>(in millions)</i>		
Net cash provided by (used in):			
Operating activities	\$ 1,880	\$ 1,898	\$ 824
Investing activities	(1,192)	(765)	278
Financing activities	(1,718)	(817)	(1,508)
Effect of exchange rate changes on cash	(13)	6	(1)
Net increase (decrease) in cash and cash equivalents	<u>\$ (1,043)</u>	<u>\$ 322</u>	<u>\$ (407)</u>

We and the IRS tentatively reached a settlement for resolving the statutory notices of deficiency and notices of proposed adjustments with respect to years 2008 through 2015. We expect to pay tax and interest totaling approximately \$600 million to \$700 million, which we expect to be partially offset by future reductions to our mandatory deemed repatriation tax obligations and tax savings from interest deductions aggregating to approximately \$100 to \$150 million. See Part I, Item 1, Note 14, Income Tax Expense for further details.

As further explained under Key Developments - Financing Activities above, we have taken recent actions to reduce our overall debt levels and extend the average maturity. Following these actions, we have reduced the outstanding principal amount of our debt by approximately \$1.73 billion since July 2, 2021 and over 80% of the principal amount is now due in 2026 or later. We also have an existing shelf registration statement (the “Shelf Registration Statement”) filed with the Securities and Exchange Commission that expires in August 2024, which allows us to offer and sell shares of common stock, preferred stock, warrants, and debt securities. We used the Shelf Registration Statement to complete our offering of \$1.0 billion aggregate principal amount of senior unsecured notes in December 2021, and we may use the Shelf Registration Statement or other capital sources, including other offerings of equity or debt securities or the credit markets, to satisfy future financing needs, including planned or unanticipated capital expenditures, investments, debt repayments or other expenses. Any such additional financing will be subject to market conditions and may not be available on terms acceptable to us or at all.

During 2023, we expect expenditures for property, plant and equipment for our company plus our portion of the capital expenditures by our Flash Ventures joint venture with Kioxia for its operations to aggregate to \$3.2 billion. After consideration of the Flash Ventures’ lease financing of its capital expenditures and net operating cash flow, we expect net cash used for our purchases of property, plant and equipment and net activity in notes receivable relating to Flash Ventures to be a cash outflow of approximately \$1.6 billion during 2023. 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.

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, capital expenditure needs and other cash material cash requirements for at least the next twelve months and the foreseeable future. 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.

A total of \$1.82 billion and \$1.99 billion of our cash and cash equivalents was held outside of the U.S. as of July 1, 2022 and July 2, 2021, respectively. There are no material tax consequences that were not previously accrued for on the repatriation of this cash.

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 \$1.08 billion for 2022, as compared to \$175 million for 2021. Changes in our operating assets and liabilities are largely affected by our working capital requirements, which are dependent on the effective management of our cash conversion cycle as well as timing of payments for taxes. Our cash conversion cycle measures how quickly we can convert our products into cash through sales. At the end of the respective fourth quarters, the cash conversion cycles were as follows (in days):

	2022	2021	2020
	<i>(in days)</i>		
Days sales outstanding	56	42	50
Days in inventory	107	98	87
Days payables outstanding	(66)	(63)	(67)
Cash conversion cycle	97	77	70

Changes in days sales outstanding (“DSO”) are generally due to the timing of shipments. Changes in days in inventory (“DIO”) are generally related to the timing of inventory builds. Changes in days payables outstanding (“DPO”) 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 2022, DSO increased by 14 days over the prior year, reflecting timing of shipments, as well as more favorable customer terms in the prior year, partially offset by a decrease of approximately 6 days for higher factoring of receivables. We have seen no significant deterioration in our receivables as a result of COVID-19 or other market conditions. DIO increased by 9 days over the prior fiscal year, reflecting higher stocking levels of raw materials to minimize the risk of supply chain disruptions. DPO increased 3 days over the prior year, primarily reflecting routine variations in the timing of purchases and payments during the period.

Investing Activities

Net cash used in investing activities in 2022 primarily consisted of \$1.1 billion in capital expenditures and a \$91 million net increase in notes receivable issuance to Flash Ventures. Net cash used by investing activities in 2021 primarily consisted of a \$1.1 billion of capital expenditures, partially offset by a \$231 million net decrease in notes receivable issuances to Flash Ventures.

Our cash equivalents are primarily invested in money market funds that invest in U.S. Treasury securities and U.S. Government agency securities.

Financing Activities

During 2022, net cash used in financing activities primarily related to our efforts to reduce our overall level of debt. See “*Key Development - Financing Activities*” above for additional discussion. Net cash used in financing activities in 2021 primarily consisted of \$886 million for repayment of debt, which included \$600 million in voluntary prepayments on our Term Loan B-4, and \$56 million for taxes paid on vested stock awards under employee stock plans, partially offset by \$134 million of cash from the issuance of stock under our employee stock plans.

A discussion of our cash flows for the year ended July 3, 2020 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 July 2, 2021 filed with the Securities and Exchange Commission on August 27, 2021.

Off-Balance Sheet Arrangements

Other than the commitments related to Flash Ventures incurred in the normal course of business and certain indemnification provisions (see “Short and Long-term Liquidity-Indemnifications” 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 Unisoft (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 10, *Related Parties and Related Commitments and Contingencies*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Short and Long-term Liquidity

Material Cash Commitments

The following is a summary of our known material cash commitments, including those for capital expenditures, as of July 1, 2022:

	Total	1 Year (2023)	2-3 Years (2024-2025)	4-5 Years (2026-2027)	More than 5 Years (Beyond 2027)
	<i>(in millions)</i>				
Long-term debt, including current portion ⁽¹⁾	\$ 7,100	\$ —	\$ 1,363	\$ 4,737	\$ 1,000
Interest on debt	1,185	256	466	288	175
Flash Ventures related commitments ⁽²⁾	5,263	3,162	1,683	631	(213)
Operating leases	369	48	92	82	147
Purchase obligations and other commitments	3,705	2,467	989	99	150
Mandatory Deemed Repatriation Tax	765	106	384	275	—
Total	\$ 18,387	\$ 6,039	\$ 4,977	\$ 6,112	\$ 1,259

⁽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

In addition to our existing debt, we have \$2.25 billion available for borrowing under our revolving credit facility until January 2027, subject to customary conditions under the loan agreement. 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 8, *Debt*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K. The loan agreement governing our revolving credit facility and our term loan A-2 due 2027 requires us to comply with a leverage ratio financial covenant. As of July 1, 2022, we were in compliance with this financial covenant.

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 July 1, 2022, we were in compliance with all covenants under these Japanese lease facilities. See Part II, Item 8, Note 10, *Related Parties and Related Commitments and Contingencies*, 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 under the 2017 Act that are payable in the following fiscal years (in millions):

	July 1, 2022
2023	\$ 106
2024	165
2025	219
2026	275
Total	\$ 765

For additional information regarding our estimate of the total tax liability for the mandatory deemed repatriation tax, see Part II, Item 8, Note 14, *Income Tax Expense*, of the Notes to Consolidated Financial Statements included in our Annual Report on Form 10-K for the year ended June 28, 2019.

Unrecognized Tax Benefits

As of July 1, 2022, the liability for unrecognized tax benefits (excluding accrued interest and penalties) was approximately \$1.05 billion. Accrued interest and penalties related to unrecognized tax benefits as of July 1, 2022 was approximately \$254 million. Of these amounts, approximately \$1.16 billion could result in potential cash payments. With the exception of the tentative settlement, we are not able to provide a reasonable estimate of the timing of future tax payments related to these obligations.

During 2022, we and the IRS tentatively reached a settlement for resolving the statutory notices of deficiency and notices of proposed adjustments with respect to years 2008 through 2015 subject to the parties entering into final stipulations and a closing agreement. As a result, the trial originally scheduled to take place in May 2022 was cancelled. The tentative settlement for resolution incrementally increased the liability for unrecognized tax benefits, including interest and offsetting tax benefits, by \$324 million. Including this incremental increase, we expect to pay tax and interest totaling approximately \$600 million to \$700 million, which we expect to be partially offset by future reductions to our mandatory deemed repatriation tax obligations and tax savings from interest deductions aggregating to approximately \$100 to \$150 million. While we continue to work with the IRS to come to a final agreement on the federal tax and interest calculations, we are uncertain as to when a final agreement will be reached, and the exact timing of when any payments will be made. However, we believe it is reasonably likely that payments may be made within the next twelve months and have classified that portion of these unrecognized tax benefits, including interest, in Income taxes payable on our Consolidated Balance Sheet as of July 1, 2022. This classification and amount may be subject to change in the next twelve months depending on when we are able to reach a final agreement with the IRS.

Mandatory Research and Development Expense Capitalization

Beginning in 2023, the 2017 Act requires us to capitalize and amortize research and development expenses rather than expensing them in the year incurred, which is expected to result in materially higher cash tax payments, if not repealed or otherwise modified.

Interest Rate Risk

We have generally held a balance of fixed and variable rate debt. As of July 1, 2022, we had reduced the amount of variable rate debt to \$2.70 billion from \$5.43 billion as of July 2, 2021. As of July 1, 2022, a one percent increase in the variable rate of interest would increase annual interest expense by \$27 million. We currently have pay-fixed interest rate swaps of \$2.0 billion notional amount, which would mitigate the impact of fluctuations in variable interest rates through February 2023.

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 8, Note 7, *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 has authorized a stock repurchase program for the repurchase of up to \$5.00 billion of our common stock, which authorization is effective through July 25, 2023. For the year ended July 1, 2022, we did not make any stock repurchases and have not repurchased any shares of our common stock pursuant to our stock repurchase program since the first quarter of 2019. Although we will reevaluate the repurchasing of our common stock when appropriate, there can be no assurance if, when or at what level we may resume such activity. The remaining amount available to be repurchased under our current stock repurchase program as of July 1, 2022 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.

Cash Dividend

We issued a quarterly cash dividend from the first quarter of 2013 up to the third quarter of 2020. In April 2020, we suspended our dividend to reinvest in the business and to support our ongoing deleveraging efforts. We will reevaluate our dividend policy as our leverage ratio improves.

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 revenues, expenses, assets, liabilities and shareholders’ equity. We have adopted accounting policies and practices that are generally accepted in the industry in which we operate. If these estimates differ significantly from actual results, the impact to the 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. We also provide resellers and OEMs with other sales incentive programs. The Company records estimated variable consideration related to these items as a reduction to revenue at the time of revenue recognition. 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. The Company constrains variable consideration until the likelihood of a significant revenue reversal is not probable and believes 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.

For sales to OEMs, the Company's methodology for estimating variable consideration is based on the amount of consideration expected to be earned based on the OEMs' volume of purchases from the Company or other agreed upon sales incentive programs. For sales to resellers, the methodology for estimating variable consideration is based on several factors including historical pricing information, current pricing trends and channel inventory levels. Estimating the impact of these factors requires significant judgment and differences between the estimated and actual amounts of variable consideration can be significant.

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. While adjustments to these reserves have generally not been material, in 2019, we recorded a charge to Cost of Sales of \$110 million primarily to reduce component inventory to net realizable value as a result of a sudden change in demand for certain products.

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

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 fourth quarter for each reporting unit. 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 in the identification of our reporting units. We also make judgments and assumptions in the assignment of assets and liabilities to our 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 of our 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. Our recent assessments have indicated that fair value exceeds carrying value by a reasonable margin and we have not identified any impairment indicators for our reporting units.

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 6, *Fair Value Measurements and Investments*, and Note 7, *Derivative Instruments and Hedging Activities*, of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Due to macroeconomic changes and volatility experienced in the foreign exchange market recently, we believe sensitivity analysis is more informative in representing the potential impact to the portfolio as a result of market movement. Therefore, we have performed sensitivity analyses for 2022 and 2021, using a modeling technique that measures the change in the fair values arising from a hypothetical 10% adverse movement in the levels of foreign currency exchange rates relative to the U.S. dollar, with all other variables held constant. The analyses cover all of our foreign currency derivative contracts used to offset the underlying exposures. The foreign currency exchange rates used in performing the sensitivity analyses were based on market rates in effect at July 1, 2022 and July 2, 2021. The sensitivity analyses indicated that a hypothetical 10% adverse movement in foreign currency exchange rates relative to the U.S. dollar would result in a foreign exchange fair value loss of \$306 million and \$183 million at July 1, 2022 and July 2, 2021, respectively.

During 2022, 2021 and 2020, 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 Interest Rate Risk

Variable Interest Rate Risk

We have generally held a balance of fixed and variable rate debt. As of July 1, 2022, we had reduced the amount of variable rate debt to \$2.70 billion from \$5.43 billion as of July 2, 2021. As of July 2, 2022, our only variable rate debt outstanding was our Term Loan A-2 Loan, which bears interest, at the Company's option, at a per annum rate equal to either (x) the Adjusted Term Secured Overnight Financing Rate ("SOFR") (as defined in the Loan Agreement) plus an applicable margin varying from 1.125% to 2.000% or (y) a base rate plus an applicable margin varying from 0.125% to 1.000%, in each case depending on the corporate family ratings of the Company from at least two of Standard & Poor's Ratings Services, Moody's Investors Service, Inc. and Fitch Ratings, Inc., with an initial interest rate of Adjusted Term SOFR plus 1.375%.

As of July 1, 2022, a one percent increase in the variable rate of interest would increase annual interest expense by \$27 million. We currently have pay-fixed interest rate swaps of \$2.0 billion notional amount, which would mitigate the impact of fluctuations in variable interest rates noted above through February 2023.

For additional information regarding our variable interest rate debt, see Part II, Item 8, Note 8, *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**

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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 July 1, 2022 and July 2, 2021, the related consolidated statements of operations, comprehensive income (loss), cash flows and shareholders' equity for each of the years in the three-year period ended July 1, 2022, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of July 1, 2022, 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 July 1, 2022 and July 2, 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended July 1, 2022, 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 July 1, 2022, 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 *Controls and Procedures - 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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Assessment of variable consideration for sales to resellers

As discussed in Note 1 to the consolidated financial statements, the Company provides resellers with price protection and 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's estimate of variable consideration for sales to resellers is based on several factors, including historical pricing information, current pricing trends, and channel inventory levels.

We identified the assessment of variable consideration for sales to resellers as a critical audit matter. Evaluating the assumptions used by the Company to estimate the variable consideration, specifically anticipated price decreases based on historical pricing information, current pricing trends, and channel inventory levels during the expected reseller holding period, required a higher degree of auditor judgment due to the uncertainty involved in the estimate.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's process of determining the variable consideration for sales to resellers, including controls related to the development of the assumption of anticipated price decreases during the reseller holding period. We evaluated the Company's ability to reasonably estimate the assumptions used to determine the variable consideration by comparing historically recorded variable consideration to actual subsequent payments and credits. We developed an expectation of the variable consideration for resellers based on historically recorded variable consideration, subsequent payments and credits issued and then compared our expectation to the actual variable consideration recorded.

Goodwill Re-allocation - Fair Value of the Reporting Units

As discussed in Notes 1 and 3 to the consolidated financial statements, historically, the Company had been managed and reported under a single operating segment. In 2021, the Chief Executive Officer, who is the Company's Chief Operating Decision Maker, announced a decision to reorganize the Company's business by forming two separate product business units: flash-based products (Flash) and hard disk drives (HDD). To align the new operating model and business structure, the Company made management organizational changes and implemented new reporting modules and processes to provide discrete information to manage the business. Effective July 3, 2021, the Company's management finalized its assessment of the Company's operating segments and concluded that the Company now has two operating segments: Flash and HDD. In connection with the Company's determination of its operating segments, effective July 3, 2021, the Company determined that its operating segments were also its reporting units and re-allocated its goodwill between its reporting units based on the estimated relative fair values of the reporting units, with \$4,328 million allocated to the HDD reporting unit and \$5,738 million allocated to the Flash reporting unit.

We identified the assessment of the fair value of the reporting units as of July 3, 2021 as a critical audit matter. Subjective auditor judgment was required in assessing the forecasted revenue and forecasted cost of revenue assumptions used in the income approach to estimate the fair value of the reporting units. The assessment of these assumptions was challenging due to the degree of uncertainty related to the forecasted revenue and cost of revenue. Differences in judgment used to determine these assumptions could have a significant effect on the reporting units' estimated fair value and the resulting re-allocation of goodwill.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's process to estimate the

reporting units' fair value, including controls related to the determination of the forecasted revenue and forecasted cost of revenue assumptions for the reporting units. We evaluated the Company's forecasted revenue and cost of revenue assumptions by:

- comparing the forecasted revenue and cost of revenue to the Company's budget,
- comparing the forecasted revenue and cost of revenue to actual revenue and cost of revenue recorded subsequent to the measurement date,
- comparing the forecasted revenue growth rate to the actual revenue growth rate in prior years,
- comparing the forecasted cost of revenue to actual cost of revenue in prior years,
- comparing the forecasted revenue growth rate to the forecasted revenue growth rate projected for peer companies and the industry, as well as other economic data, and
- comparing the forecasted gross margin to historical gross margin for peer companies.

/s/ KPMG LLP

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

Santa Clara, California
August 24, 2022

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

	July 1, 2022	July 2, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 2,327	\$ 3,370
Accounts receivable, net	2,804	2,257
Inventories	3,638	3,616
Other current assets	684	514
Total current assets	9,453	9,757
Property, plant and equipment, net	3,670	3,188
Notes receivable and investments in Flash Ventures	1,396	1,586
Goodwill	10,041	10,066
Other intangible assets, net	213	442
Other non-current assets	1,486	1,093
Total assets	\$ 26,259	\$ 26,132
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 1,902	\$ 1,934
Accounts payable to related parties	320	398
Accrued expenses	1,636	1,390
Income taxes payable	869	263
Accrued compensation	510	634
Current portion of long-term debt	—	251
Total current liabilities	5,237	4,870
Long-term debt	7,022	8,474
Other liabilities	1,779	2,067
Total liabilities	14,038	15,411
Commitments and contingencies (Notes 10, 11, 14 and 17)		
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 — 315 shares in 2022 and 312 shares in 2021; outstanding — 315 shares in 2022 and 308 shares in 2021	3	3
Additional paid-in capital	3,733	3,608
Accumulated other comprehensive loss	(554)	(197)
Retained earnings	9,039	7,539
Treasury stock — common shares at cost; 0 shares in 2022 and 4 shares in 2021	—	(232)
Total shareholders' equity	12,221	10,721
Total liabilities and shareholders' equity	\$ 26,259	\$ 26,132

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		
	July 1, 2022	July 2, 2021	July 3, 2020
Revenue, net	\$ 18,793	\$ 16,922	\$ 16,736
Cost of revenue	12,919	12,401	12,955
Gross profit	5,874	4,521	3,781
Operating expenses:			
Research and development	2,323	2,243	2,261
Selling, general and administrative	1,117	1,105	1,153
Employee termination, asset impairment, and other charges	43	(47)	32
Total operating expenses	3,483	3,301	3,446
Operating income	2,391	1,220	335
Interest and other income (expense):			
Interest income	6	7	28
Interest expense	(304)	(326)	(413)
Other income, net	30	26	4
Total interest and other expense, net	(268)	(293)	(381)
Income (loss) before taxes	2,123	927	(46)
Income tax expense	623	106	204
Net income (loss)	\$ 1,500	\$ 821	\$ (250)
Income (loss) per common share			
Basic	\$ 4.81	\$ 2.69	\$ (0.84)
Diluted	\$ 4.75	\$ 2.66	\$ (0.84)
Weighted average shares outstanding:			
Basic	312	305	298
Diluted	316	309	298
Cash dividends declared per share	\$ —	\$ —	\$ 1.50

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		
	July 1, 2022	July 2, 2021	July 3, 2020
Net income (loss)	\$ 1,500	\$ 821	\$ (250)
Other comprehensive loss, before tax:			
Actuarial pension gain (loss)	26	27	(1)
Foreign currency translation adjustment	(239)	(36)	(7)
Net unrealized loss on derivative contracts	(180)	(33)	(93)
Total other comprehensive loss, before tax	(393)	(42)	(101)
Income tax benefit related to items of other comprehensive loss, before tax	36	2	12
Other comprehensive loss, net of tax	(357)	(40)	(89)
Total comprehensive income (loss)	<u>\$ 1,143</u>	<u>\$ 781</u>	<u>\$ (339)</u>

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

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

	Year Ended		
	July 1, 2022	July 2, 2021	July 3, 2020
Cash flows from operating activities			
Net income (loss)	\$ 1,500	\$ 821	\$ (250)
Adjustments to reconcile net income (loss) to net cash provided by operations:			
Depreciation and amortization	929	1,212	1,566
Stock-based compensation	326	318	308
Deferred income taxes	114	(242)	(82)
Gain on disposal of assets	(16)	(70)	(7)
Gain on business divestiture	(9)	—	—
Amortization of debt issuance costs and discounts	44	40	40
Other non-cash operating activities, net	67	(6)	6
Changes in:			
Accounts receivable, net	(546)	121	(1,175)
Inventories	(22)	(546)	200
Accounts payable	(129)	11	192
Accounts payable to related parties	(78)	(9)	75
Accrued expenses	246	257	103
Income taxes payable	(74)	95	81
Accrued compensation	(123)	162	124
Other assets and liabilities, net	(349)	(266)	(357)
Net cash provided by operating activities	<u>1,880</u>	<u>1,898</u>	<u>824</u>
Cash flows from investing activities			
Purchases of property, plant and equipment	(1,122)	(1,146)	(647)
Proceeds from the sale of property, plant and equipment	15	143	—
Acquisitions, net of cash acquired	—	—	(22)
Proceeds from dispositions of business	32	—	—
Notes receivable issuances to Flash Ventures	(809)	(541)	(353)
Notes receivable proceeds from Flash Ventures	718	772	1,284
Strategic investments and other, net	(26)	7	16
Net cash provided by (used in) investing activities	<u>(1,192)</u>	<u>(765)</u>	<u>278</u>
Cash flows from financing activities			
Issuance of stock under employee stock plans	122	134	141
Taxes paid on vested stock awards under employee stock plans	(90)	(56)	(72)
Dividends paid to shareholders	—	—	(595)
Repayment of government grants	—	(9)	—
Repayment of debt	(3,621)	(886)	(982)
Proceeds from debt	1,894	—	—
Debt issuance costs	(23)	—	—
Net cash used in financing activities	<u>(1,718)</u>	<u>(817)</u>	<u>(1,508)</u>
Effect of exchange rate changes on cash	(13)	6	(1)
Net increase (decrease) in cash and cash equivalents	(1,043)	322	(407)
Cash and cash equivalents, beginning of year	3,370	3,048	3,455
Cash and cash equivalents, end of year	<u>\$ 2,327</u>	<u>\$ 3,370</u>	<u>\$ 3,048</u>
Supplemental disclosure of cash flow information:			
Cash paid for income taxes	\$ 423	\$ 348	\$ 341
Cash paid for interest	\$ 245	\$ 283	\$ 372
Noncash exchange of Term Loan A-1 for Term Loan A-2	\$ 2,104	\$ —	\$ —

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 June 28, 2019	312	\$ 3	(17)	\$ (1,268)	\$ 3,851	\$ (68)	\$ 7,449	\$ 9,967
Net loss	—	—	—	—	—	—	(250)	(250)
Employee stock plans	—	—	7	531	(462)	—	—	69
Adoption of new accounting standards	—	—	—	—	—	—	(5)	(5)
Stock-based compensation	—	—	—	—	308	—	—	308
Dividends to shareholders	—	—	—	—	20	—	(469)	(449)
Actuarial pension loss	—	—	—	—	—	(5)	—	(5)
Foreign currency translation adjustment	—	—	—	—	—	(6)	—	(6)
Net unrealized loss on derivative contracts	—	—	—	—	—	(78)	—	(78)
Balance at July 3, 2020	312	\$ 3	(10)	\$ (737)	\$ 3,717	\$ (157)	\$ 6,725	\$ 9,551
Net income	—	—	—	—	—	—	821	821
Adoption of new accounting standard	—	—	—	—	—	—	(7)	(7)
Employee stock plans	—	—	6	505	(427)	—	—	78
Stock-based compensation	—	—	—	—	318	—	—	318
Actuarial pension gain	—	—	—	—	—	23	—	23
Foreign currency translation adjustment	—	—	—	—	—	(36)	—	(36)
Net unrealized loss on derivative contracts	—	—	—	—	—	(27)	—	(27)
Balance at July 2, 2021	312	\$ 3	(4)	\$ (232)	\$ 3,608	\$ (197)	\$ 7,539	\$ 10,721
Net income	—	—	—	—	—	—	1,500	1,500
Employee stock plans	3	—	4	232	(201)	—	—	31
Stock-based compensation	—	—	—	—	326	—	—	326
Actuarial pension gain	—	—	—	—	—	24	—	24
Foreign currency translation adjustment	—	—	—	—	—	(239)	—	(239)
Net unrealized loss on derivative contracts	—	—	—	—	—	(142)	—	(142)
Balance at July 1, 2022	315	\$ 3	—	\$ —	\$ 3,733	\$ (554)	\$ 9,039	\$ 12,221

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: Cloud, Client and Consumer. The Company also generates immaterial license and royalty revenue from its extensive intellectual property (“IP”) portfolio, 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.

Reclassifications

Certain reclassifications have been made to prior period amounts in the Consolidated Financial Statements to conform to the current period presentation. These reclassifications did not have a material impact on previously reported amounts.

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, we report a 53-week fiscal year to align the fiscal year with the foregoing policy. Fiscal years 2022 and 2021, which ended on July 1, 2022 and July 2, 2021, respectively, are comprised of 52 weeks, with all quarters presented consisting of 13 weeks. Fiscal year 2020, which ended on July 3, 2020, was comprised of 53 weeks, with the first quarter consisting of 14 weeks and the remaining quarters consisting of 13 weeks each. Unless otherwise indicated, references herein to specific years and quarters are to fiscal years and fiscal quarters, and references to financial information are on a consolidated basis.

Segment Reporting

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. Historically, the Company had been managed and reported under a single operating segment. In 2021, the Chief Executive Officer, who is the Company’s Chief Operating Decision Maker (“CODM”), announced a decision to reorganize the Company’s business by forming two separate product business units: flash-based products (“Flash”) and hard disk drives (“HDD”). To align the new operating model and business structure, the Company made management organizational changes and implemented new reporting modules and processes to provide discrete information to manage the business. Effective July 3, 2021, the Company’s management finalized its assessment of the Company’s operating segments and concluded that the Company now has two operating segments: flash-based products and hard disk drives.

The CODM evaluates performance of the Company and makes decisions regarding allocation of resources based on each operating segment’s net revenue and gross margin. Because of the integrated nature of the Company’s production and distribution activities, separate segment asset measures are either not available or not used as a basis for the CODM to evaluate the performance of or to allocate resources to the segments.

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

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 with consideration given to the potential impacts of the ongoing COVID-19 pandemic. 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. These deposits are typically in excess of U.S. insured limits. Cash equivalents are carried at cost plus accrued interest, which approximates fair value.

Equity Investments

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, 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, these securities are measured and recorded using the measurement alternative under Accounting Standards Update ("ASU") No. 2016-01, "Financial Instruments — Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities," 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.

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

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 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 and improvements are depreciated over periods ranging from fifteen to thirty 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.

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

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 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 2022, 2021, or 2020.

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 assets are depreciated or 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 5, *Supplemental Financial Statement Data*, for additional disclosures related to the Company's other intangible assets.

Revenue and Accounts Receivable

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 professional service arrangements and 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.

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

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. The Company also provides resellers and original equipment manufacturers (“OEMs”) with other sales incentive programs. The Company records estimated variable consideration related to these items as a reduction to revenue at the time of revenue recognition. 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 constrains variable consideration until the likelihood of a significant revenue reversal is not probable and believes 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.

For sales to OEMs, the Company’s methodology for estimating variable consideration is based on the amount of consideration expected to be earned based on the OEMs’ volume of purchases from the Company or other agreed upon sales incentive programs. For sales to resellers, the Company’s methodology for estimating variable consideration is based on several factors including historical pricing information, current pricing trends and channel inventory levels. Differences between the estimated and actual amounts of variable consideration are recognized as adjustments to revenue.

Marketing development program costs 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.

For 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. If applicable, 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.

The Company records an allowance for doubtful accounts by analyzing specific customer accounts and assessing the risk of loss based on insolvency or other collection issues. In addition, the Company routinely analyzes the various receivable aging categories to establish reserves based on a combination of past due receivables and expected future 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 trajectory 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.

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

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 17, *Legal Proceedings*, for additional disclosures related to the Company's litigation.

Advertising Expense

Advertising costs are expensed as incurred and amounted to \$88 million, \$84 million and \$93 million in 2022, 2021 and 2020, respectively. These expenses are included in Selling, general and administrative 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 ("RSU"), restricted stock unit awards with performance conditions or market conditions ("PSU"), rights to purchase shares of common stock under the Company's Employee Stock Purchase Plan ("ESPP") and shares issuable in connection with convertible debt.

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

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 RSUs and PSUs with a performance condition are determined based on the closing market price of the Company's stock on the date of the grant. The fair values of all ESPP purchase rights are estimated using the Black-Scholes-Merton option-pricing model and require the input of highly subjective assumptions. The fair values of PSUs with a market condition are estimated using a Monte Carlo simulation model. PSUs are granted to certain employees and vest only after the achievement of pre-determined performance or market conditions. Once these conditions 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 with a performance condition will be earned and records the related stock-based compensation expense over the service period. Compensation expense for PSUs with market conditions is recognized ratably over the required service period regardless of expected or actual achievement.

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 primarily comprised of unrealized gains or losses on foreign exchange contracts and interest rate swap agreements designated as cash flow hedges, 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, Thai baht, Korean won and Israeli shekel, which had an aggregate notional amount of \$6.07 billion and \$4.88 billion at July 1, 2022 and July 2, 2021, respectively.

If the derivative is designated as a cash flow hedge and is determined to be highly effective, 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 Secured Overnight Financing Rate ("SOFR")-based term loans. The Company pays interest monthly at a fixed rate and receives interest monthly at the SOFR 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, net.

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

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 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.

The Company reports 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. In addition, the other components of net benefit cost are presented in Other income, net in the Consolidated Statements of Operations.

Leases

Effective June 29, 2019, the first day of the year ended July 3, 2020, the Company adopted ASU No. 2016-02, "Leases (Topic 842)" ("ASU 2016-02") which resulted in an after-tax decrease to opening retained earnings of \$5 million for the cumulative effect of adoption, primarily due to previously recorded sublease proceed assumptions on lease exit liabilities for which there was no expected future economic benefit at transition. The Company leases certain domestic and international facilities and data center space under long-term, non-cancelable operating leases that expire at various dates through 2034. These leases include no material variable or contingent lease payments. Operating lease assets and liabilities are recognized based on the present value of the remaining lease payments discounted using the Company's incremental borrowing rate. Operating lease assets also include prepaid lease payments minus any lease incentives. Extension or termination options present in the Company's lease agreements are included in determining the right-of-use asset and lease liability when it is reasonably certain the Company will exercise that option. Lease expense is recognized on a straight-line basis over the lease term.

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

Note 2. Recent Accounting Pronouncements

Accounting Pronouncements Recently Adopted

In December 2019, the FASB issued ASU No. 2019-12, “Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes” (“ASU 2019-12”). ASU 2019-12 removes certain exceptions for recognizing deferred taxes for investments, performing intraperiod allocation and calculating income taxes in interim periods. The ASU also adds guidance to reduce complexity in certain areas, including recognizing deferred taxes for tax goodwill and allocating taxes to members of a consolidated group. The Company adopted this ASU on July 3, 2021, the first day of the year ended July 1, 2022, with no material impact on its Consolidated Financial Statements.

Recently Issued Accounting Pronouncements Not Yet Adopted

In August 2020, the FASB issued ASU No. 2020-06, “Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity’s Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity” (“ASU 2020-06”). ASU 2020-06 reduces the number of accounting models for convertible debt instruments and convertible preferred stock and results in fewer instruments with embedded conversion features being separately recognized from the host contract as compared with current standards. Those instruments that do not have a separately recognized embedded conversion feature will no longer recognize a debt issuance discount related to such a conversion feature and would recognize less interest expense on a periodic basis. Additionally, the ASU amends the calculation of the share dilution impact related to a conversion feature and eliminates the treasury method as an option. The Company adopted the new standard effective July 2, 2022, the first day of the year ending June 30, 2023, using the modified retrospective method. On the date of adoption, the Company recorded a reduction in Additional Paid-In Capital of \$128 million, a reduction of unamortized debt discount of \$48 million, a reduction of deferred income tax liabilities of \$11 million, and an increase to retained earnings of \$91 million retained earnings for 2023 for the after-tax impact of previously recognized amortization of the debt discount associated with the Company’s convertible senior notes.

In November 2021, the FASB issued ASU No. 2021-10, “Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance” (“ASU 2021-10”). ASU 2021-10 increases the transparency of government assistance received by requiring most business entities to disclose information about government assistance received, including (1) the types of assistance, (2) the entity’s accounting for the assistance, and (3) the effect of the assistance on an entity’s financial statements. This ASU is effective for fiscal years (and interim periods within those fiscal years) beginning after December 15, 2021, which for the Company is the first quarter of 2023. Early adoption is permitted. The Company expects to adopt this standard in the first quarter of 2023 and does not expect any material impact from the adoption of this standard.

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

Note 3. Business Segments, Geographic Information, and Concentrations of Risk

The following table summarizes the operating performance of the Company's reportable segments:

	2022	2021	2020
	<i>(in millions, except percentages)</i>		
Net revenue:			
Flash	\$ 9,753	\$ 8,706	\$ 7,769
HDD	9,040	8,216	8,967
Total net revenue	<u>\$ 18,793</u>	<u>\$ 16,922</u>	<u>\$ 16,736</u>
Gross profit:			
Flash	\$ 3,527	\$ 2,611	\$ 1,903
HDD	2,661	2,221	2,602
Total gross profit for segments	<u>6,188</u>	<u>4,832</u>	<u>4,505</u>
Unallocated corporate items:			
Amortization of acquired intangible assets	(66)	(331)	(610)
Stock-based compensation expense	(48)	(55)	(51)
Contamination related charges	(207)	—	—
Recoveries from a power outage incident	7	75	(68)
Other	—	—	5
Total unallocated corporate items	<u>(314)</u>	<u>(311)</u>	<u>(724)</u>
Consolidated gross profit	<u>\$ 5,874</u>	<u>\$ 4,521</u>	<u>\$ 3,781</u>
Gross margin:			
Flash	36.2 %	30.0 %	24.5 %
HDD	29.4 %	27.0 %	29.0 %
Consolidated gross margin	31.3 %	26.7 %	22.6 %

Goodwill

In connection with the Company's determination of its operating segments, effective July 3, 2021, the Company determined that its operating segments were also its reporting units and re-allocated its goodwill between its reporting units based on the estimated relative fair values of the reporting units. In addition, management performed a goodwill impairment assessment for each segment and concluded there were no impairment indicators as of July 1, 2022.

In May 2022, the Company made a decision to exit its RISC-V development operations and completed the sale of the portion of its business for a price of \$25 million. The sale of this business included the transfer of a small number of employees and an immaterial amount of other tangible and intangible assets as well as goodwill. The transaction resulted in a gain of approximately \$9 million recorded in Employee termination, asset impairment, and other charges in the Consolidated Statements of Operations for the fiscal year ended July 1, 2022. The revenues and expenses related to this business were not material to the Consolidated Financial Statements and did not qualify to be reported as a discontinued operation. The operating results of this business have been reflected in the Company's results from continuing operations in the Consolidated Statements of Operations for all periods presented through the date of disposition.

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

The following table provides a summary of goodwill activity for the period:

	Flash	HDD	Total
	<i>(in millions)</i>		
Balance at July 2, 2021	\$ 5,738	\$ 4,328	\$ 10,066
Reduction in goodwill in connection with disposition of business	(14)	—	(14)
Foreign currency translation adjustment	(6)	(5)	(11)
Balance at July 1, 2022	<u>\$ 5,718</u>	<u>\$ 4,323</u>	<u>\$ 10,041</u>

Disaggregated Revenue

The Company's broad portfolio of technology and products address multiple end markets. In 2022, the Company refined the end markets it reports to be Cloud, Client and Consumer. Cloud represents a large and growing end market comprised primarily of products for public or private cloud environments and enterprise customers, which the Company believes it is uniquely positioned to address as the only provider of both Flash and HDD. Through the Client end market, the Company provides its OEM and channel customers a broad array of high-performance flash and hard drive solutions across personal computer, mobile, gaming, automotive, virtual reality headsets, at-home entertainment, and industrial spaces. The Consumer end market is highlighted by the Company's broad range of retail and other end-user products, which capitalize on the strength of the Company's product brand recognition and vast points of presence around the world.

The Company's disaggregated revenue information is as follows:

	2022	2021	2020
	<i>(in millions)</i>		
Revenue by End Market			
Cloud	\$ 8,017	\$ 5,723	\$ 7,018
Client	7,076	7,281	6,335
Consumer	3,700	3,918	3,383
Total Revenue	<u>\$ 18,793</u>	<u>\$ 16,922</u>	<u>\$ 16,736</u>

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

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:

	2022	2021	2020
	<i>(in millions)</i>		
Net revenue ⁽¹⁾			
United States	\$ 5,411	\$ 3,789	\$ 4,679
China	4,525	4,339	4,075
Hong Kong	3,645	3,624	2,592
Rest of Asia	1,884	1,492	1,699
Europe, Middle East and Africa	2,872	3,061	2,926
Other	456	617	765
Total	<u>\$ 18,793</u>	<u>\$ 16,922</u>	<u>\$ 16,736</u>

⁽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.

	2022	2021
	<i>(in millions)</i>	
Long-lived assets ⁽¹⁾		
United States	\$ 1,130	\$ 1,068
Malaysia	831	632
China	441	395
Thailand	816	651
Rest of Asia	406	398
Europe, Middle East and Africa	46	44
Total	<u>\$ 3,670</u>	<u>\$ 3,188</u>

⁽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 and OEMs, cloud service providers, resellers, distributors and retailers throughout the world. For each of 2022, 2021 and 2020, no customer accounted for 10% or more of the Company's net revenue. For 2022, 2021 and 2020, the Company's top 10 customers accounted for 45%, 39%, and 42% 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 July 1, 2022, the Company had net accounts receivable of \$2.8 billion, and no customer accounted for 10% or more of the Company's outstanding accounts receivable. As of July 2, 2021, the Company had net accounts receivable of \$2.3 billion, and one customer, Kingston Technology Company, accounted for 12% of the Company's net accounts receivable. Reserves for potential credit losses were not material as of each period end.

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

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 require silicon wafers for the memory and controller components. The Company's flash memory wafers are currently supplied almost entirely from Flash Ventures (as defined in Note 10) and the Company's 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.

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

Note 4. Revenues

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 July 1, 2022 or July 2, 2021. Contract liabilities relate to customers' payments in advance of performance under the contract and primarily relate to remaining performance obligations under professional service and support and maintenance contracts. Contract liabilities as of July 1, 2022 and July 2, 2021 and changes in contract liabilities during 2022 and 2021 were not material.

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. The Company had no direct incremental costs to obtain contracts that have an expected benefit of greater than one year.

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, professional service 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 July 1, 2022 was \$45 million, which is mainly attributable to the functional IP license and professional service arrangements. The Company expects to recognize this amount as revenue as follows: \$43 million in 2023, and \$2 million in 2024 and thereafter.

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

Note 5. 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. In 2022, 2021 and 2020, the Company sold trade accounts receivable and received cash proceeds of \$400 million, \$233 million and \$411 million, respectively. The discounts on the trade accounts receivable sold during the periods were not material and were recorded within Other income, net in the Consolidated Statements of Operations. As of July 1, 2022 and July 2, 2021, the amount of factored receivables that remained outstanding was \$300 million and \$0 million, respectively.

Inventories

	July 1, 2022	July 2, 2021
<i>(in millions)</i>		
Inventories:		
Raw materials and component parts	\$ 1,603	\$ 1,623
Work-in-process	1,162	1,088
Finished goods	873	905
Total inventories	\$ 3,638	\$ 3,616

Property, plant and equipment, net

	July 1, 2022	July 2, 2021
<i>(in millions)</i>		
Property, plant and equipment:		
Land	\$ 269	\$ 278
Buildings and improvements	1,920	1,854
Machinery and equipment	8,642	7,860
Computer equipment and software	494	440
Furniture and fixtures	54	51
Construction-in-process	591	476
Property, plant and equipment, gross	11,970	10,959
Accumulated depreciation	(8,300)	(7,771)
Property, plant and equipment, net	\$ 3,670	\$ 3,188

Depreciation expense for property, plant and equipment totaled \$708 million, \$726 million and \$797 million in 2022, 2021 and 2020, respectively.

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

Intangible assets

The following tables present intangible assets as of July 1, 2022 and July 2, 2021:

	July 1, 2022			
	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	<i>(in years)</i>		<i>(in millions)</i>	
Finite:				
Existing technology	3	\$ 4,231	\$ (4,231)	\$ —
Trade names and trademarks	7	648	(573)	75
Customer relationships	6	613	(555)	58
Leasehold interests	31	1	(1)	—
Total finite intangible assets		5,493	(5,360)	133
In-process research and development		80	—	80
Total intangible assets		<u>\$ 5,573</u>	<u>\$ (5,360)</u>	<u>\$ 213</u>

	July 2, 2021			
	Weighted Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	<i>(in years)</i>		<i>(in millions)</i>	
Finite:				
Existing technology	3	\$ 4,231	\$ (4,165)	\$ 66
Trade names and trademarks	7	647	(486)	161
Customer relationships	6	618	(491)	127
Leasehold interests	31	12	(4)	8
Total finite intangible assets		5,508	(5,146)	362
In-process research and development		80	—	80
Total intangible assets		<u>\$ 5,588</u>	<u>\$ (5,146)</u>	<u>\$ 442</u>

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 2022, 2021 and 2020, 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:

	2022	2021	2020
	<i>(in millions)</i>		
Intangible asset amortization	\$ 221	\$ 486	\$ 769

The remaining \$133 million estimated future amortization expense for intangible assets currently subject to amortization as of July 1, 2022, will be fully recognized in 2023.

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

Product warranty liability

Changes in the warranty accrual were as follows:

	2022	2021	2020
	<i>(in millions)</i>		
Warranty accrual, beginning of period	\$ 363	\$ 408	\$ 350
Charges to operations	146	137	203
Utilization	(103)	(106)	(151)
Changes in estimate related to pre-existing warranties	(61)	(76)	6
Warranty accrual, end of period	<u>\$ 345</u>	<u>\$ 363</u>	<u>\$ 408</u>

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:

	2022	2021
	<i>(in millions)</i>	
Warranty accrual		
Current portion (included in Accrued expenses)	\$ 162	\$ 175
Long-term portion (included in Other liabilities)	183	188
Total warranty accrual	<u>\$ 345</u>	<u>\$ 363</u>

Other liabilities

	2022	2021
	<i>(in millions)</i>	
Other liabilities:		
Non-current net tax payable	\$ 659	\$ 684
Non-current portion of unrecognized tax benefits	477	750
Other non-current liabilities	643	633
Total other liabilities	<u>\$ 1,779</u>	<u>\$ 2,067</u>

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

Accumulated other comprehensive income (loss)

Accumulated other comprehensive income (loss) (“AOCI”), 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 AOCI:

	Actuarial Pension Gains (Losses)	Foreign Currency Translation Adjustment	Unrealized Gains (Losses) on Derivative Contracts	Total Accumulated Comprehensive Income (Loss)
	<i>(in millions)</i>			
Balance at July 3, 2020	\$ (58)	\$ (2)	\$ (97)	\$ (157)
Other comprehensive income (loss) before reclassifications	27	(36)	42	33
Amounts reclassified from accumulated other comprehensive loss	—	—	(75)	(75)
Income tax benefit (expense) related to items of other comprehensive loss	(4)	—	6	2
Net current-period other comprehensive income (loss)	23	(36)	(27)	(40)
Balance at July 2, 2021	(35)	(38)	(124)	(197)
Other comprehensive income (loss) before reclassifications	26	(239)	(352)	(565)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	172	172
Income tax benefit (expense) related to items of other comprehensive income (loss)	(2)	—	38	36
Net current-period other comprehensive income (loss)	24	(239)	(142)	(357)
Balance at July 1, 2022	\$ (11)	\$ (277)	\$ (266)	\$ (554)

During 2022 and 2021, the amounts reclassified out of AOCI included losses of \$125 million and \$50 million related to foreign exchange contracts and losses of \$47 million and \$25 million related to interest rate swaps, respectively. The losses related to interest rate swaps were charged to interest expense and losses related to foreign contracts were substantially all charged to cost of revenue in the Consolidated Statements of Operations.

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

Note 6. Fair Value Measurements and Investments

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 July 1, 2022 and July 2, 2021, and indicate the fair value hierarchy of the valuation techniques utilized to determine such values:

	July 1, 2022			
	Level 1	Level 2	Level 3	Total
	<i>(in millions)</i>			
Assets:				
Cash equivalents - Money market funds	\$ 266	\$ —	\$ —	\$ 266
Foreign exchange contracts	—	61	—	61
Interest rate swap contracts	—	3	—	3
Total assets at fair value	<u>\$ 266</u>	<u>\$ 64</u>	<u>\$ —</u>	<u>\$ 330</u>
Liabilities:				
Foreign exchange contracts	\$ —	\$ 316	\$ —	\$ 316
Total liabilities at fair value	<u>\$ —</u>	<u>\$ 316</u>	<u>\$ —</u>	<u>\$ 316</u>

	July 2, 2021			
	Level 1	Level 2	Level 3	Total
	<i>(in millions)</i>			
Assets:				
Cash equivalents - Money market funds	\$ 1,283	\$ —	\$ —	\$ 1,283
Foreign exchange contracts	—	14	—	14
Total assets at fair value	<u>\$ 1,283</u>	<u>\$ 14</u>	<u>\$ —</u>	<u>\$ 1,297</u>
Liabilities:				
Foreign exchange contracts	\$ —	\$ 65	\$ —	\$ 65
Interest rate swap contracts	—	80	—	80
Total liabilities at fair value	<u>\$ —</u>	<u>\$ 145</u>	<u>\$ —</u>	<u>\$ 145</u>

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.

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

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 7, *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 based on published credit default swap curves.

During 2022 and 2021, the Company had no transfers of financial assets and liabilities between levels and there were no changes in valuation techniques and the inputs used in the fair value measurement.

Financial Instruments Not Carried at Fair Value

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 2022 and the fourth quarter of 2021, respectively.

	July 1, 2022		July 2, 2021	
	Carrying Value	Fair Value	Carrying Value	Fair Value
	<i>(in millions)</i>			
1.50% convertible notes due 2024	\$ 1,048	\$ 1,040	\$ 1,017	\$ 1,173
4.75% senior unsecured notes due 2026	2,291	2,205	2,288	2,556
Variable interest rate Term Loan A-2 maturing 2027	2,693	2,621	—	—
2.85% senior unsecured notes due 2029	495	412	—	—
3.10% senior unsecured notes due 2032	495	389	—	—
Variable interest rate Term Loan B-4	—	—	1,093	1,094
Variable interest rate Term Loan A-1	—	—	4,327	4,346
Total	\$ 7,022	\$ 6,667	\$ 8,725	\$ 9,169

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

Note 7. Derivative Instruments and Hedging Activities

As of July 1, 2022, 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 July 1, 2022, the Company did not have any derivative contracts with credit-risk-related contingent features.

Changes in fair values of the non-designated foreign exchange contracts are recognized in Other income, net and are largely offset by corresponding changes in the fair values of the foreign currency denominated monetary assets and liabilities. For each of 2022, 2021 and 2020, total net realized and unrealized transaction and foreign exchange contract currency gains and losses were not material to the Company's Consolidated Financial Statements.

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 July 1, 2022 and July 2, 2021, 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.

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

Note 8. Debt

Debt consisted of the following as of July 1, 2022 and July 2, 2021:

	July 1, 2022	July 2, 2021
	<i>(in millions)</i>	
1.50% convertible notes due 2024	\$ 1,100	\$ 1,100
4.75% senior unsecured notes due 2026	2,300	2,300
Variable interest rate Term Loan A-2 maturing 2027	2,700	—
2.85% senior unsecured notes due 2029	500	—
3.10% senior unsecured notes due 2032	500	—
Variable interest rate Term Loan A-1	—	4,332
Variable interest rate Term Loan B-4	—	1,093
Total debt	7,100	8,825
Issuance costs and debt discounts	(78)	(100)
Subtotal	7,022	8,725
Less current portion of long-term debt	—	(251)
Long-term debt	\$ 7,022	\$ 8,474

On January 7, 2022, the Company entered into a restatement agreement (the “Restatement Agreement”) to amend and restate the Loan Agreement, originally dated as of April 29, 2016 (including subsequent amendments and the Restatement Agreement, collectively, the “Loan Agreement”), to provide for, among other things, (i) the issuance of a new \$3.00 billion Term Loan A-2 maturing in January 2027 (the “Term Loan A-2”) to replace its previously existing Term Loan A-1; and (ii) the availability of a new \$2.25 billion revolving credit facility maturing in January 2027 (the “2027 Revolving Facility”) to replace its previously existing \$2.25 billion revolving credit facility and (iii) additional covenant flexibility and other modifications. The obligations under the Loan Agreement are the senior unsecured obligations of the Company and do not benefit from any collateral or subsidiary guarantees.

The Term Loan A-2 Loan bears interest, at the Company’s option, at a per annum rate equal to either (x) the Adjusted Term SOFR (as defined in the Loan Agreement) plus an applicable margin varying from 1.125% to 2.000% or (y) a base rate plus an applicable margin varying from 0.125% to 1.000%, in each case depending on the corporate family ratings of the Company from at least two of Standard & Poor’s Ratings Services (“S&P”), Moody’s Investors Service, Inc. (“Moody’s”) and Fitch Ratings, Inc. (“Fitch”), with an initial interest rate of Adjusted Term SOFR plus 1.375%. During 2022, the Company made scheduled and voluntary principal payments aggregating \$300 million on its Term Loan A-2. \$150 million was applied toward scheduled amortization through the quarter ending September 29, 2023 and the remainder towards the principal due at maturity. As of July 1, 2022, the remaining balance of Term Loan A-2 amortizes in quarterly installments of \$38 million per quarter beginning with the quarter ending December 29, 2023; and the remaining balance payable at maturity on January 7, 2027. Issuance costs for Term Loan A-2 are amortized to interest expense over its term and unamortized costs were \$7 million as of July 1, 2022.

Loans under the 2027 Revolving Facility bear interest at a per annum rate, at the Company’s option, equal to either (x) the Adjusted Term SOFR Rate (as defined in the Loan Agreement) plus an applicable margin varying from 1.125% to 2.000% or (y) a base rate plus an applicable margin varying from 0.125% to 1.000%, in each case depending on the corporate family ratings of the Company from at least two of S&P, Moody’s and Fitch, with an initial rate of Adjusted Term SOFR plus 1.375%. The Company is also required to pay an unused commitment fee on the 2027 Revolving Facility ranging from 0.120% to 0.350% based on the corporate family ratings of the Company from at least two of S&P, Moody’s and Fitch, with an initial unused commitment fee of 0.200%.

In October 2021, the Company voluntarily prepaid the remaining principal balance of its Term Loan B-4 in accordance with its terms.

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

In December 2021, the Company issued \$500 million aggregate principal amount of 2.850% senior unsecured notes due February 1, 2029 (the “2029 Senior Unsecured Notes”) and issued \$500 million aggregate principal amount of 3.100% senior unsecured notes due February 1, 2032 (the “2032 Senior Unsecured Notes”) pursuant to the terms of an indenture, dated as of December 10, 2021 (the “Base Indenture”) between the Company and U.S. Bank National Association, as trustee (the “Trustee”), as supplemented by the first supplemental indenture dated as of December 10, 2021 (the “First Supplemental Indenture”) between the Company and the Trustee. As used herein, “Indenture” means the Base Indenture, as supplemented by the First Supplemental Indenture. The Indenture contains certain restrictive covenants which are subject to a number of limitations and exceptions. Interest for both the 2029 Senior Unsecured Notes and 2032 Senior Unsecured Notes is payable on February 1 and August 1 of each year. The Company is not required to make principal payments on either the 2029 Senior Unsecured Notes or 2032 Senior Unsecured Notes prior to their maturity dates.

In accordance with the Loan Agreement, the Company is required to comply with a leverage ratio financial covenant. As of July 1, 2022, the Company was in compliance with this financial covenant.

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.

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 at an initial conversion price of \$121.91 per share of common stock. 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. As of July 1, 2022, the Company is required to settle any conversion value with the principal amount of the 2024 Convertible Notes settled in cash and any excess value in cash, shares of the Company’s common stock, or a combination thereof, pursuant to the terms of an indenture, dated as of February 13, 2018 between the Company, HGST, Inc., WD Media, LLC, Western Digital (Fremont), LLC, Western Digital Technologies, Inc. and U.S. Bank National Association, as trustee (the “Trustee”), as supplemented by the first supplemental indenture dated as of June 30, 2022 (the “First Supplemental Indenture”) between the Company and the Trustee. Prior to June 30, 2022, any conversion value on the 2024 Convertible Notes could be settled in cash, shares of the Company’s common stock, or a combination thereof. As of July 1, 2022, none of the conditions allowing holders of the Convertible Notes to convert had been met. Since 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.

Through July 1, 2022, the Company had separately accounted 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 July 1, 2022, debt discount and issuance costs of \$52 million remained unamortized. See Note 2, *Recent Accounting pronouncements*, for a discussion of a change in accounting that became effective July 2, 2022.

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. Issuance costs for the 2026 Senior Unsecured Notes are amortized to interest expense over the term of the 2026 Senior Unsecured Notes and as of July 1, 2022, issuance costs of \$9 million remained unamortized.

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

The Loan Agreement requires the Company to comply with a maximum total funded debt to trailing twelve-month Consolidated Adjusted EBITDA ratio financial covenant. Consolidated 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 Loan Agreement, including, for purposes of the financial covenants, an addback for certain depreciation-related payments made to the Company's Flash Ventures. As of July 1, 2022, the Company was in compliance with these financial covenants under the Loan Agreement.

The Loan 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, certain asset sales, mergers, consolidations, liquidations and dissolutions. In addition, the indentures governing the Company's 2026 Senior Unsecured Notes, 2029 Senior Unsecured Notes, 2032 Senior Unsecured Notes and the 2024 Convertible Notes each contain various restrictive covenants, which include limitations on 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 July 1, 2022, required annual future debt payments were as follows:

	Future Debt Payments
	<i>(in millions)</i>
Fiscal year:	
2024	\$ 1,213
2025	150
2026	2,450
2027	2,287
2028 and thereafter	1,000
Total debt maturities	<u>7,100</u>
Issuance costs and debt discounts	(78)
Net carrying value	<u>\$ 7,022</u>

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

Note 9. 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, Thailand and the Philippines. All pension and other post-retirement benefit plans outside of the Company's Japan, Thailand and the Philippines defined benefit pension plans (the "Pension Plans") are immaterial to the Consolidated Financial Statements.

Obligations and Funded Status

The following table presents the unfunded status of the benefit obligations for the Pension Plans:

	2022	2021	2020
	<i>(in millions)</i>		
Change in benefit obligation:			
Projected benefit obligation at beginning of period	\$ 359	\$ 366	\$ 352
Service cost	15	16	13
Interest cost	5	5	4
Plan amendments	9	—	—
Actuarial loss (gain)	(31)	(5)	3
Benefits paid	(9)	(11)	(8)
Settlement/curtailment	—	—	—
Non-U.S. currency movement	(54)	(12)	2
Projected benefit obligation at end of period	<u>294</u>	<u>359</u>	<u>366</u>
Change in plan assets:			
Fair value of plan assets at beginning of period	227	215	209
Actual return on plan assets	—	20	4
Employer contributions	10	11	9
Benefits paid	(7)	(11)	(8)
Non-U.S. currency movement	(41)	(8)	1
Fair value of plan assets at end of period	<u>189</u>	<u>227</u>	<u>215</u>
Unfunded status	<u>\$ 105</u>	<u>\$ 132</u>	<u>\$ 151</u>

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

	July 1, 2022	July 2, 2021
	<i>(in millions)</i>	
Current liabilities	\$ 1	\$ 1
Non-current liabilities	104	131
Net amount recognized	<u>\$ 105</u>	<u>\$ 132</u>

The accumulated benefit obligation for the Pension Plans was \$294 million at July 1, 2022. As of July 1, 2022, the Accumulated Other Income pension balance was \$13 million. There were no material prior service credits for the defined benefit pension plans recognized in Accumulated other comprehensive loss in the Consolidated Balance Sheet as of July 1, 2022.

Net periodic benefit costs were not material for 2022, 2021, and 2020.

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

*Assumptions**Weighted-Average Assumptions*

The weighted-average actuarial assumptions used to determine the projected benefit obligations for the Pension Plans were as follows:

	2022	2021	2020
Discount rate	2.3 %	1.4 %	1.1 %
Rate of compensation increase	2.3 %	2.0 %	2.0 %

The weighted-average actuarial assumptions used to determine benefit costs for the Pension Plans were as follows:

	2022	2021	2020
Discount rate	1.4 %	1.1 %	1.1 %
Expected long-term rate of return on plan assets	2.5 %	2.5 %	2.5 %
Rate of compensation increase	2.0 %	2.0 %	1.7 %

The Company develops a discount rate by calculating when the estimated benefit payments will be due. Management then matches the benefit payments to high quality bonds 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 each plan as well as the investment portfolio applicable to the plan depending on each plan's economic environment. 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. As of July 1, 2022, Pension Plan assets materially consisted of plan assets related to the Japan Pension Plan and as such the assumption used herein is primarily related to the Japan Pension Plan.

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 the Pension Plans 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 55% in debt securities, 30% in equity securities, and the remaining 15% 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.

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

Fair Value Measurements

The following tables present the Pension Plans' major asset categories and their associated fair values and net asset values as of July 1, 2022 and July 2, 2021:

	July 1, 2022			
	Level 1	Level 2	Level 3	Total
	<i>(in millions)</i>			
Plan assets measured at fair value:				
Equity:				
Equity commingled/mutual funds ⁽¹⁾⁽²⁾	\$ —	\$ 63	\$ —	\$ 63
Fixed income:				
Fixed income commingled/mutual funds ⁽¹⁾⁽³⁾	—	95	—	95
Net plan assets subject to leveling	—	158	—	158
Real estate investment trust at net asset value				31
Total investments at fair value	\$ —	\$ 158	\$ —	\$ 189

	July 2, 2021			
	Level 1	Level 2	Level 3	Total
	<i>(in millions)</i>			
Plan assets measured at fair value:				
Equity:				
Equity commingled/mutual funds ⁽¹⁾⁽²⁾	\$ —	\$ 73	\$ —	\$ 73
Fixed income:				
Fixed income commingled/mutual funds ⁽¹⁾⁽³⁾	—	123	—	123
Net plan assets subject to leveling	—	196	—	196
Real estate investment trust at net asset value				30
Total investments at fair value	\$ —	\$ 196	\$ —	\$ 226

⁽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 2022 or 2021.

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.

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

Cash Flows

The Company's expected employer contributions for 2023 and annual benefit payments over the next five years for its Pension Plans are not expected to be material.

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

Note 10. Related Parties and Related Commitments and Contingencies

Flash Ventures

The Company procures substantially all of its flash-based memory wafers from its business ventures with Kioxia Corporation (“Kioxia”), 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 Kioxia has a 50.1% ownership interest in each of these entities. Through Flash Ventures, the Company and Kioxia collaborate in the development and manufacture of flash-based memory wafers, which are manufactured by Kioxia 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 Kioxia at cost and then resells those wafers to the Company and Kioxia at cost plus a markup.

Flash Partners. Flash Partners was formed in 2004 in connection with the construction of Kioxia’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 Kioxia’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 Kioxia’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 Kioxia related to the construction and operation of Kioxia’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 Kioxia related to the construction and operation of Kioxia’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 in 2018.

K1. The Company also has a facility agreement with Kioxia related to the construction and operation of Kioxia’s “K1” 300-millimeter wafer fabrication facility 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. K1 is now fully operational. In connection with the start-up of this facility, as of July 1, 2022, the Company has made prepayments toward future K1 building depreciation aggregating approximately \$360 million which are to be credited against future wafer charges. As of July 1, 2022, there were no remaining committed prepayments.

Y7. In January 2022, the Company entered into additional agreements regarding Flash Ventures’ investment in a new wafer fabrication facility currently under construction in Yokkaichi, Japan, referred to as “Y7”. The primary purpose of Y7 is to provide clean room space to continue the transition of existing flash-based wafer capacity to newer flash technology nodes. The Company is committed to pay, among other items, future building depreciation prepayments aggregating approximately \$290 million as follows: \$268 million in 2023 and \$22 million in 2024, to be credited against future wafer charges.

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

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 July 1, 2022 and July 2, 2021:

	July 1, 2022	July 2, 2021
	<i>(in millions)</i>	
Notes receivable, Flash Partners	\$ 27	\$ 191
Notes receivable, Flash Alliance	55	213
Notes receivable, Flash Forward	793	561
Investment in Flash Partners	166	199
Investment in Flash Alliance	243	293
Investment in Flash Forward	112	129
Total notes receivable and investments in Flash Ventures	<u>\$ 1,396</u>	<u>\$ 1,586</u>

During 2022, 2021 and 2020, the Company made net payments to Flash Ventures of \$4.70 billion, \$4.36 billion and \$3.09 billion, respectively, for purchased flash-based memory wafers and net loans.

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 July 1, 2022 and July 2, 2021, the Company had Accounts payable balances due to Flash Ventures of \$320 million and \$398 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 July 1, 2022, 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.

	July 1, 2022
	<i>(in millions)</i>
Notes receivable	\$ 875
Equity investments	521
Operating lease guarantees	1,760
Inventory and prepayments	937
Maximum estimable loss exposure	<u>\$ 4,093</u>

As of July 1, 2022 and July 2, 2021, the Company's retained earnings included undistributed earnings of Flash Ventures of \$43 million and \$33 million, respectively.

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

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 Flash Ventures entity's operating cash flow is insufficient to fund these investments.

In February 2022, contamination of certain material used in manufacturing processes occurred at both the Yokkaichi and Kitakami, Japan fabrication facilities, resulting in damage to inventory units in production, a temporary disruption to production operations and a reduction in the Company's flash wafer availability. During 2022, the Company incurred charges of \$207 million related to this contamination incident that were recorded in Cost of revenue, which primarily consisted of scrapped inventory and rework costs, decontamination and other costs needed to restore the facilities to normal capacity, and under absorption of overhead costs. The Company is evaluating potential options for recovery.

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 and a reduction in the Company's flash wafer availability. As a result of this incident, the Company incurred charges of \$68 million in 2020, which were recorded in Cost of revenue and primarily consisted of the write-off of damaged inventory and unabsorbed manufacturing overhead costs. In 2022 and 2021, the Company recovered \$7 million and \$75 million, respectively, related to this incident from the utility and its insurance carriers, which was recorded in cost of revenue.

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 Kioxia 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 July 1, 2022.

	Lease Amounts	
	(Japanese yen, in billions)	(U.S. dollar, in millions)
Total guarantee obligations	¥ 238	\$ 1,760

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

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 July 1, 2022 in U.S. dollars, based upon the Japanese yen to U.S. dollar exchange rate as of July 1, 2022:

Annual Installments	Payment of Principal Amortization	Purchase Option Exercise Price at Final Lease Terms <i>(in millions)</i>	Guarantee Amount
2023	\$ 505	\$ 53	\$ 558
2024	368	96	464
2025	191	88	279
2026	174	133	307
2027 and thereafter	39	113	152
Total guarantee obligations	<u>\$ 1,277</u>	<u>\$ 483</u>	<u>\$ 1,760</u>

The Company and Kioxia 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 July 1, 2022, 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 Unisoft (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 July 1, 2022, July 2, 2021 and July 3, 2020, the Company recognized approximately 4%, 3%, and 1% of its consolidated revenue on products distributed by the Unis Venture, respectively. The outstanding accounts receivable due from the Unis Venture were 5% of Accounts receivable, net as of both July 1, 2022 and July 2, 2021.

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

Note 11. Leases and Other Commitments
Leases

The following table summarizes supplemental balance sheet information related to operating leases as of July 1, 2022:

	Lease Amounts
	<i>(in millions)</i>
Minimum lease payments by fiscal year:	
2023	\$ 48
2024	48
2025	44
2026	43
2027	39
Thereafter	147
Total future minimum lease payments	369
Less: Imputed Interest	52
Present value of lease liabilities	317
Less: Current portion (included in Accrued expenses)	40
Long-term operating lease liabilities (included in Other liabilities)	<u>\$ 277</u>
Operating lease right-of-use assets (included in Other non-current assets)	\$ 300
Weighted average remaining lease term in years	8.3
Weighted average discount rate	3.4 %

The following table summarizes supplemental disclosures of operating cost and cash flow information related to operating leases for the year ended July 1, 2022:

	July 1,
	2022
	<i>(in millions)</i>
Cost of operating leases	\$ 58
Cash paid for operating leases	51
Operating lease assets obtained in exchange for operating lease liabilities	137

Cost of operating leases was as follows:

	2022	2021	2020
	<i>(in millions)</i>		
Cost of operating leases	\$ 58	\$ 50	\$ 55

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

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 July 1, 2022, the Company had the following minimum long-term commitments:

	Long-term commitments
	<i>(in millions)</i>
Fiscal year:	
2023	\$ 572
2024	348
2025	180
2026	53
2027	46
Thereafter	150
Total	<u>\$ 1,349</u>

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

Note 12. 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.

Through December 31, 2021, eligible employees were generally able to contribute up to 75% of their eligible compensation on a combined pre-tax and Roth basis, 10% on a combined pre-tax catch-up and Roth catch-up basis, and 10% on a non-Roth after-tax basis subject to Internal Revenue Service (“IRS”) limitations. Effective January 1, 2022, eligible employees are generally able to contribute up to 85% of their eligible compensation on a combined pre-tax and Roth basis regardless of age, and 10% of their eligible compensation on an after-tax basis by payroll withholding. The Company makes a basic matching contribution equal to 50% of each eligible participant’s contribution that does not exceed 6% of the eligible participant’s annual compensation in the year of contribution. Prior to January 1, 2022, the Company’s employer matching contributions vested over a two-year graded period through December 31, 2021 with all unvested contributions vesting on December 31, 2021 and, effective January 1, 2022, the Company’s employer matching contributions vest immediately. 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 2022, 2021 and 2020, the Company made Plan contributions of \$36 million, \$34 million and \$33 million, respectively.

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

Note 13. Shareholders' Equity

2021 Long-Term Incentive Plan

In November 2021, stockholders approved the Western Digital Corporation 2021 Long-Term Incentive Plan (the "2021 Plan"). Upon the effective date of the 2021 Plan, no new awards were granted under the Western Digital Corporation Amended and Restated 2017 Performance Incentive Plan (the "2017 Plan"). The aggregate maximum number of shares of the Company's common stock that may be issued pursuant to awards from the 2021 Plan may not exceed (a) 9.5 million shares, less (b) one share of common stock for each share of common stock granted under a prior plan on or after September 5, 2021 and prior to the 2021 Plan's effective date, plus (c) any shares of common stock subject to outstanding awards under a prior plan as of the effective date that on or after the effective date are forfeited, terminated, expire, lapse without being exercised (to the extent applicable), or are otherwise reacquired by the Company. Any shares subject to awards under the 2017 Plan that are cancelled, forfeited, or otherwise terminate without having vested or been exercised, as applicable, will become available for award grants under the 2021 Plan. The types of awards that may be granted under the 2021 Plan include stock options, stock appreciation rights ("SARs"), RSUs, PSUs, restricted stock 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 awards. Persons eligible to receive awards under the 2021 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 2021 Plan and the 2017 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 is ten years after the grant date of the award. RSUs typically vest over periods ranging from two to four years from the date of grant. PSUs are granted to certain employees and vest only after the achievement of pre-determined performance conditions or market conditions and completion of requisite service periods. Once the performance conditions or market conditions are met, vesting of PSUs is generally subject to continued service by the employee. Currently, there are outstanding awards that may vest under the 2017 Plan as well as outstanding awards of stock options under the SanDisk Corporation 2013 Incentive Plan, a plan assumed in connection with the acquisition of SanDisk Corporation, which may affect dilution.

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 July 1, 2022, the maximum number of shares of the Company's common stock that was authorized for award grants under the 2021 Plan was 10.8 million shares. Shares issued in respect of all awards granted under the 2021 Plan count against the 2021 Plan's share limit on a one-for-one basis, whereas under the 2017 Plan, shares issued in respect of awards other than stock options and SARs granted count against the 2017 Plan's share limit as 1.72 shares for every one share issued in connection with such award. The 2021 Plan will terminate on November 22, 2031 unless terminated earlier by the Company's Board of Directors.

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 2022, 2021 and 2020, the Company issued 2.1 million, 3.2 million, and 3.0 million shares, respectively, under the ESPP for aggregate purchase amounts of \$113 million, \$115 million and \$107 million, respectively.

To the extent available, the Company may issue 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.

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

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:

	2022	2021	2020
	<i>(in millions)</i>		
Options	\$ —	\$ —	\$ 7
RSUs and PSUs	286	282	268
ESPP	40	36	33
Total	<u>\$ 326</u>	<u>\$ 318</u>	<u>\$ 308</u>

	2022	2021	2020
	<i>(in millions)</i>		
Cost of revenue	\$ 48	\$ 55	\$ 51
Research and development	167	158	163
Selling, general and administrative	111	105	94
Subtotal	<u>326</u>	<u>318</u>	<u>308</u>
Tax benefit	<u>(48)</u>	<u>(47)</u>	<u>(45)</u>
Total	<u>\$ 278</u>	<u>\$ 271</u>	<u>\$ 263</u>

Windfall tax benefits related to the vesting and exercise of stock-based awards, which are recognized as a component of the Company's Income tax expense, were not material for the periods presented.

Compensation cost related to unvested RSUs, PSUs, and rights to purchase shares of common stock under the 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 July 1, 2022:

	Unamortized Compensation Costs	Weighted Average Service Period
	<i>(in millions)</i>	
		<i>(years)</i>
RSUs and PSUs ⁽¹⁾	\$ 557	2.2
ESPP	61	1.2
Total unamortized compensation cost	<u>\$ 618</u>	

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

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

Plan Activities
Stock Options

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

	Number of Shares <i>(in millions)</i>	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life <i>(in years)</i>	Aggregate Intrinsic Value <i>(in millions)</i>
Options outstanding at June 28, 2019	3.9	\$ 65.72		
Exercised	(0.8)	43.26		\$ 12
Canceled or expired	(0.4)	88.58		
Options outstanding at July 3, 2020	2.7	69.16		
Exercised	(0.4)	44.34		6
Canceled or expired	(0.8)	75.42		
Options outstanding at July 2, 2021	1.5	72.84		
Exercised	(0.2)	43.80		3
Canceled or expired	(0.4)	97.65		
Options outstanding at July 1, 2022	<u>0.9</u>	\$ 66.76	0.54	

No options were granted in 2022, 2021 or 2020. All outstanding options were exercisable at July 1, 2022.

RSUs and PSUs

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

	Number of Shares <i>(in millions)</i>	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value at Vest Date <i>(in millions)</i>
RSUs and PSUs outstanding at June 28, 2019	11.6	\$ 62.07	
Granted	7.4	55.32	
Vested	(4.4)	58.36	\$ 252
Forfeited	(1.3)	63.33	
RSUs and PSUs outstanding at July 3, 2020	13.3	60.92	
Granted	8.8	40.40	
Vested	(4.5)	60.18	196
Forfeited	(1.5)	55.74	
RSUs and PSUs outstanding at July 2, 2021	16.1	50.12	
Granted	6.9	60.00	
Vested	(5.2)	54.27	317
Forfeited	(2.4)	52.14	
RSUs and PSUs outstanding at July 1, 2022	<u>15.4</u>	\$ 52.89	

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.

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

Fair Value Valuation Assumptions*RSU and PSU Grants*

The fair value of the Company's RSU and PSU awards with a performance condition is determined based upon the closing price of the Company's stock price on the date of grant. The fair value of PSU awards with a market condition is estimated using a Monte Carlo simulation model on the date of grant using historical volatility.

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 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:

	2022	2021	2020
Weighted-average expected term (in years)	1.25	1.25	1.25
Risk-free interest rate	1.42%	0.10%	0.55%
Stock price volatility	0.48	0.56	0.59
Dividend yield	—%	—%	1.08%
Fair value	\$15.56	\$21.59	\$12.76

Stock Repurchase Program

The Company's Board of Directors has authorized a stock repurchase program for the repurchase of up to \$5.0 billion of the Company's common stock, which authorization is effective through July 25, 2023. For the year ended July 1, 2022, the Company did not make any stock repurchases and has not repurchased any shares of its common stock pursuant to its stock repurchase program since the first quarter of 2019. Although the Company will reevaluate the repurchasing of common stock when appropriate, there can be no assurance if, when or at what level the Company may resume such activity. The remaining amount available to be repurchased under the Company's current stock repurchase program as of July 1, 2022 was \$4.5 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.

Stock Reserved for Issuance

The following table summarizes all common stock reserved for issuance at July 1, 2022:

	Number of Shares <i>(in millions)</i>
Outstanding awards and shares available for award grants	26
ESPP	4
Total	30

Dividends to Shareholders

The Company issued a quarterly cash dividend from the first quarter of 2013 up to the third quarter of 2020. In April 2020, the Company suspended its dividend to reinvest in the business and to support its ongoing deleveraging efforts.

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

Note 14. Income Tax Expense*Income (loss) Before Taxes*

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

	2022	2021	2020
	<i>(in millions)</i>		
Foreign	\$ 1,384	\$ 218	\$ (695)
Domestic	739	709	649
Income (loss) before taxes	<u>\$ 2,123</u>	<u>\$ 927</u>	<u>\$ (46)</u>

Income Tax Expense (Benefit)

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

	2022	2021	2020
	<i>(in millions)</i>		
Current:			
Foreign	\$ 143	\$ 195	\$ 157
Domestic - Federal	341	154	124
Domestic - State	25	(1)	5
	<u>509</u>	<u>348</u>	<u>286</u>
Deferred:			
Foreign	27	(20)	(29)
Domestic - Federal	84	(208)	(53)
Domestic - State	3	(14)	—
	<u>114</u>	<u>(242)</u>	<u>(82)</u>
Income tax expense	<u>\$ 623</u>	<u>\$ 106</u>	<u>\$ 204</u>

The Tax Cuts and Jobs Act (the “2017 Act”), enacted on December 22, 2017, includes a broad range of tax reform proposals affecting businesses. The Company completed its accounting for the tax effects of the enactment of the 2017 Act during the second quarter of 2019. However, the U.S. Treasury and the IRS have issued tax guidance on certain provisions of the 2017 Act since the enactment date, and the Company anticipates the issuance of additional regulatory and interpretive guidance. The Company applied a reasonable interpretation of the 2017 Act along with the then-available guidance in finalizing its accounting for the tax effects of the 2017 Act. Any additional regulatory or interpretive guidance would constitute new information, which may require further refinements to the Company’s estimates in future periods.

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act (the “CARES Act”) was enacted in response to the COVID-19 pandemic in the U.S. The CARES Act, among other things, allows net operating losses arising in tax years 2018, 2019, and 2020 to be carried back to each of the five preceding taxable years to generate a refund of previously paid income taxes and increases the business interest expense limitation from 30% to 50% of adjusted taxable income for tax years 2019 and 2020. Additionally, countries around the world implemented emergency tax measures to provide relief similar to the CARES Act. The provisions of the CARES Act and the emergency tax measures around the world did not result in a material cash benefit.

On December 27, 2020, the Consolidated Appropriations Act (the “Appropriations Act”) was enacted to fund the federal government through their fiscal year, extend certain expiring tax provisions and provide additional emergency relief to individuals and businesses related to the COVID-19 pandemic in the U.S. The provisions of the Appropriations Act did not result in a material impact on the Company’s Consolidated Financial Statements.

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

On March 11, 2021, the American Rescue Plan Act of 2021 (the “Rescue Act”) was enacted to provide additional emergency relief to individuals and businesses related to the COVID-19 pandemic in the U.S. The Rescue Act includes certain business-related provisions, which did not have a material impact on the Company’s Consolidated Financial Statements. The Company continues to monitor and evaluate the regulatory and interpretive guidance related to the CARES Act, the Appropriations Act and the Rescue Act, as well as legislation in other jurisdictions.

On August 16, 2022, President Biden signed into law the Inflation Reduction Act of 2022, which contained significant law changes related to tax, climate, energy, and health care. The tax measures include, among other things, a corporate alternative minimum tax of 15%. The corporate alternative minimum tax will not be effective for the Company until fiscal year 2024 and the Company is currently evaluating the potential effects of these legislative changes.

Deferred Taxes

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

	July 1, 2022	July 2, 2021
	<i>(in millions)</i>	
Deferred tax assets:		
Sales related reserves and accrued expenses not currently deductible	\$ 71	\$ 88
Accrued compensation and benefits not currently deductible	114	143
Deferred revenue	—	128
Net operating loss carryforward	195	196
Business credit carryforward	483	461
Long-lived assets	72	101
Other	178	131
Total deferred tax assets	1,113	1,248
Deferred tax liabilities:		
Long-lived assets	(128)	(202)
Unremitted earnings of certain non-U.S. entities	(288)	(280)
Other	(17)	(20)
Total deferred tax liabilities	(433)	(502)
Valuation allowances	(580)	(558)
Deferred tax assets, net	\$ 100	\$ 188

The net deferred tax asset valuation allowance increased by \$22 million primarily due to an increase from the generation of additional business state tax credits carryforwards during the year ended July 1, 2022. 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.

The Company is permanently reinvested with respect to certain foreign earnings. There is no unrecognized deferred tax liability associated with the repatriation of these foreign undistributed earnings as it can be achieved without additional federal tax consequences.

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

Effective Tax Rate

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

	2022	2021	2020
U.S. Federal statutory rate	21 %	21 %	21 %
Tax rate differential on international income	(9)	8	(443)
Tax effect of U.S. foreign income inclusion	—	5	(38)
Tax effect of U.S. foreign minimum tax	5	1	(235)
Tax effect of U.S. foreign derived intangible income	(1)	(14)	109
Tax effect of U.S. non-deductible stock-based compensation	1	1	(21)
Tax effect of U.S. permanent differences	—	1	(26)
IRS Tentative Settlement	15	—	—
Change in valuation allowance	1	(7)	(12)
Unremitted earnings of certain non-U.S. entities	1	6	(114)
Foreign income tax credits	(3)	(5)	191
R&D tax credits	(4)	(8)	147
Other	2	2	(22)
Effective tax rate	29 %	11 %	(443)%

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 will expire in whole or in part at various dates during 2024 through 2031. 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 \$566 million, or \$1.79 per diluted share, \$390 million, or \$1.26 per diluted share, and \$464 million, or \$1.54 per diluted share, in 2022, 2021, and 2020, respectively.

As of July 1, 2022, 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
	<i>(in millions)</i>	
Federal NOL (Pre 2017 Act Generation)	\$ 627	2023 to 2038
State NOL	364	2031 to 2038
Federal tax credits	57	2023 to 2043
State tax credits	691	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 \$125 million and \$240 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 \$27 million and \$2 million, respectively.

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

As of July 1, 2022, 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 <i>(in millions)</i>	Expiration
Malaysia	\$ 122	2025 to 2028
Belgium	106	No expiration
Japan	84	2024 to 2031
Spain	46	No expiration
Netherlands	12	2025 to 2026

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.

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

	2022	2021	2020
	<i>(in millions)</i>		
Unrecognized tax benefit, beginning balance	\$ 748	\$ 717	\$ 695
Gross increases related to current year tax positions	12	21	11
Gross increases related to prior year tax positions	358	46	35
Gross decreases related to prior year tax positions	(65)	(20)	(4)
Settlements	(1)	(9)	(12)
Lapse of statute of limitations	(5)	(7)	(8)
Unrecognized tax benefit, ending balance	<u>\$ 1,047</u>	<u>\$ 748</u>	<u>\$ 717</u>

As of July 1, 2022, July 2, 2021 and July 3, 2020, the portion of the gross unrecognized tax benefits, if recognized, that would affect the effective tax rate is \$903 million, \$612 million, and \$583 million. 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 July 1, 2022, July 2, 2021 and July 3, 2020 was \$254 million, \$138 million and \$137 million, respectively. As of July 1, 2022, July 2, 2021 and July 3, 2020, the Company's payables related to unrecognized tax benefits, including accrued interest and penalties, were \$1.16 billion, \$750 million, and \$720 million, respectively. The Company believes it is reasonably likely that payments of approximately \$600 million to \$700 million may be made within the next twelve months and have classified that portion of these unrecognized tax benefits, including interest, in Income taxes payable on the Consolidated Balance Sheets as of July 1, 2022. The remaining payables related to unrecognized tax benefits are included in Other liabilities on the Consolidated Balance Sheets as of July 1, 2022, July 2, 2021 and July 3, 2020.

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

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 2013 through 2020. 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 where there is no tax holiday, the Company could be subject to examination in China for calendar years 2012 through 2021, in Ireland for calendar year 2018 through fiscal year 2021, in India for fiscal years 2008 through 2021, in Israel for calendar year 2016 through fiscal year 2021 and in Japan for fiscal years 2015 through 2021, in Malaysia for fiscal years 2014 through 2021, in Thailand for fiscal years 2012 through 2021, in Singapore for fiscal years 2018 through 2021, and in the United Kingdom for fiscal years 2017 through 2021.

As previously disclosed, the IRS issued statutory notices of deficiency and notices of proposed adjustments with respect to transfer pricing with the Company's foreign subsidiaries and intercompany payable balances for years 2008 through 2015. In September 2018 and March 2019, the Company filed petitions with the U.S. Tax Court covering years 2008 through 2012, for which it had received statutory notices of deficiency, while years 2013 through 2015 remain in the jurisdiction of the IRS's Examination function. The IRS has filed various Amendments to Answer with the U.S. Tax Court which, together with the notices of proposed adjustments, would result in additional federal income tax liabilities totaling approximately \$1.6 billion and penalties totaling \$449 million with respect to years 2008 through 2015. In May 2022, the Company and the IRS tentatively reached a settlement for resolving the statutory notices of deficiency and notices of proposed adjustments with respect to years 2008 through 2015 subject to the parties entering into final stipulations and a closing agreement. As a result, the trial originally scheduled to take place in May 2022 was cancelled. The tentative settlement for resolution incrementally increased the liability for unrecognized tax benefits, including interest and offsetting tax benefits, by \$324 million. Including this incremental increase, the Company expects to pay tax and interest totaling approximately \$600 million to \$700 million, which the Company expects to be partially offset by future reductions to its mandatory deemed repatriation tax obligations and tax savings from interest deductions aggregating to approximately \$100 to \$150 million. While the Company continues to work with the IRS to come to a final agreement on the federal tax and interest calculations, the Company is uncertain as to when a final agreement will be reached and the exact timing of when any payments will be made. However, the Company believes it is reasonably likely that these payments may be made within the next twelve months and have classified that portion of these unrecognized tax benefits, including interest in Income taxes payable on its Consolidated Balance Sheet as of July 1, 2022. This classification and amount may be subject to change in the next twelve months depending on when the Company is able to reach a final agreement with the IRS.

The Company believes that adequate provision has been made for any adjustments that may result from any other tax examinations. However, the outcome of such 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 July 1, 2022, with the exception of the tentative settlement, 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 relating to the examination of the Company's tax returns.

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

Note 15. Net Income (Loss) Per Common Share

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

	2022	2021	2020
	<i>(in millions, except per share data)</i>		
Net income (loss)	\$ 1,500	\$ 821	\$ (250)
Weighted average shares outstanding:			
Basic	312	305	298
Employee stock options, RSUs, PSUs and ESPP	4	4	—
Diluted	316	309	298
Income (loss) per common share			
Basic	\$ 4.81	\$ 2.69	\$ (0.84)
Diluted	\$ 4.75	\$ 2.66	\$ (0.84)
Anti-dilutive potential common shares excluded	3	5	15

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 (loss) per common share is computed using Net income (loss) 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 2022, the Company excluded common shares 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 2020, the Company recorded net loss, and all shares subject to outstanding equity awards have been excluded for those periods because including them would be anti-dilutive.

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

Note 16. Employee Termination, Asset Impairment, and Other Charges

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

	2022	2021	2020
	<i>(in millions)</i>		
Employee termination and other charges:			
Closure of Foreign Manufacturing Facilities	\$ —	\$ —	\$ 5
Business Realignment	50	28	44
Employee termination benefits	50	28	49
Gain on disposition of assets:			
Business Realignment	(7)	(75)	(17)
Asset impairments and losses (gains) on disposal of assets	(7)	(75)	(17)
Total employee termination, asset impairment, and other charges	<u>\$ 43</u>	<u>\$ (47)</u>	<u>\$ 32</u>

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 in 2019.

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 of organization rationalization designed to streamline its business, reduce its cost structure and focus its resources. The Company may also record credits related to gains upon sale of property in connection with these activities. The Company recognized gains related to the disposition of assets associated with these activities \$7 million and \$75 million for 2022 and 2021, respectively.

The following table presents an analysis of the components of the activity against the reserve, which consisted entirely of employee termination benefits, during the year ended July 1, 2022:

	Employee Termination Benefits
	<i>(in millions)</i>
Accrual balance at July 2, 2021	\$ 2
Charges	50
Cash payments	(35)
Accrual balance at July 1, 2022	<u>\$ 17</u>

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

Note 17. Legal Proceedings

Tax

For disclosures regarding statutory notices of deficiency issued by the IRS on June 28, 2018 and December 10, 2018, petitions filed by the Company with the U.S. Tax Court in September 2018 and March 2019, additional penalties asserted by the IRS in March 2021 and further Amendments to Answers filed by the IRS in June 2021 and January 2022, and a tentative resolution with respect to certain matters, see Note 14, *Income Tax Expense*.

Other Matters

In the normal course of business, the Company is subject to 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 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 matters could differ materially from the Company's expectations.

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 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 quarter ended July 1, 2022, that has materially affected, or is reasonably likely to materially affect, 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

Disclosure Pursuant to Section 13(r) of the Securities Exchange Act of 1934

On March 2, 2021, the U.S. government designated the Russian Federal Security Service (the “FSB”) as a blocked party under Executive Order 13382; however, on the same day, the U.S. Department of the Treasury’s Office of Foreign Assets Control issued General License No. 1B (the “OFAC General License”), which generally authorizes U.S. companies to engage in certain transactions and dealings with the FSB necessary and ordinarily incident to requesting or obtaining licenses, permits, certifications or notifications issued or registered by the FSB for the importation, distribution or use of information technology products in the Russian Federation.

Prior to February 24, 2022, in the normal course of business and as permitted and authorized by the OFAC General License, we filed notifications with, or applied for import licenses and permits from, the FSB as required pursuant to Russian encryption product import controls for the purpose of enabling us or our channel partners to import and distribute certain products in the Russian Federation. There are no gross revenues or net profits directly associated with these activities, and we do not distribute or sell products or provide services to the FSB. After February 24, 2022, we ceased shipments into Russia and we have not filed notifications with or applied for import licenses and permits from the FSB since such date. We expect to resume filing notifications with and applications for import licenses and permits from the FSB to qualify our products for importation and distribution in the Russian Federation if and when we decide to resume sales into the Russian Federation and as permitted by applicable U.S. law, including the OFAC General License.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. *Directors, 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 2022 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the year ended July 1, 2022. 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.westerndigital.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.westerndigital.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 2022 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the year ended July 1, 2022.

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 2022 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the year ended July 1, 2022.

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 2022 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the year ended July 1, 2022.

Item 14. *Principal Accountant Fees and Services*

There is incorporated herein by reference the information required by this Item included in the Company's Proxy Statement for the 2022 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after the close of the year ended July 1, 2022.

PART IV

Item 15. *Exhibits and 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 February 10, 2021 (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 February 12, 2021)
4.1	Description of Western Digital Corporation's Capital Stock (Filed as Exhibit 4.1 to the Company's Annual Report on Form 10-K (File No. 1-08703) with the Securities and Exchange Commission on August 27, 2021)
4.2	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)
4.3	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)
4.4	First Supplemental Indenture, dated as of June 30, 2022, by and between Western Digital Corporation 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. 1-08703) with the Securities and Exchange Commission on July 1, 2022)
4.5	Indenture, dated as of December 10, 2021, between Western Digital Corporation 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. 1-08703) with the Securities and Exchange Commission on December 10, 2021)
4.6	First Supplemental Indenture (including Form of 2.850% Senior Notes due 2029 and Form of 3.100% Senior Notes due 2032), dated as of December 10, 2021, between Western Digital Corporation 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. 1-08703) with the Securities and Exchange Commission on December 10, 2021)
10.1	Western Digital Corporation Amended and Restated 2017 Performance Incentive Plan, amended and restated as of August 11, 2020 (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 February 9, 2021)*
10.1.1	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)*
10.1.2	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 12, 2019)*
10.1.3	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 12, 2019)*
10.1.4	Form of Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement - Financial Measure, under the Amended and Restated 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 February 9, 2021)*
10.1.5	Form of Notice of Grant of Performance Stock Units and Performance Stock Unit Award Agreement - TSR Measure, under the Amended and Restated 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 February 9, 2021)*
10.1.6	Form of Notice and Grant of Performance Stock Units and Performance Stock Unit Award Agreement- Financial Measure, under the Amended and Restated 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 4, 2021)*
10.1.7	Form of Notice and Grant of Performance Stock Units and Performance Stock Unit Award Agreement- TSR Measure, under the Amended and Restated 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 4, 2021)*

Exhibit Number	Description
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	Western Digital Corporation Amended and Restated 2017 Performance Incentive Plan Non-Employee Director Restricted Stock Unit Grant Program, amended and restated as of August 16, 2021 (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 4, 2021)*
10.1.10	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)*
10.1.11	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 12, 2019)*
10.1.12	Form of Notice of Grant of Restricted Stock Units and Restricted Stock Unit Award Agreement – Vice President and Above, under the Amended and Restated 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 February 9, 2021)*
10.1.13	Form of Notice of Grant of Restricted Stock Units and Restricted Stock Unit Award Agreement - Vice President and Above, under the Amended and Restated 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 4, 2021)*
10.1.14	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)*
10.1.15	Notice of Grant of Performance Stock Units and Performance Stock Unit Award – TSR Measure (CEO Sign-On Award) (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 May 8, 2020)*
10.1.16	First Amendment to the Notice of Grant of Performance Stock Units and Performance Stock Unit Award – TSR Measure (CEO Sign-On Award) (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 June 17, 2022)*
10.2	Western Digital Corporation Executive Short-Term Incentive Plan (supersedes the Western Digital Corporation Executive Short-Term Incentive Plan dated August 7, 2019), dated February 9, 2021 (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 6, 2021)*
10.3	Western Digital Corporation 2021 Long-Term Incentive Plan, adopted as of August 18, 2021 (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 18, 2021)*
10.3.1	Form of Grant Notice for Performance Stock Unit Award (TSR Measure) under the Western Digital Corporation 2021 Long-Term 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 February 3, 2022)*
10.3.2	Form of Grant Notice for Performance Stock Unit Award (Financial Measures) under the Western Digital Corporation 2021 Long-Term 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 February 3, 2022)*
10.3.3	Form of Grant Notice for Restricted Stock Unit Award – Vice President and Above, under the Western Digital Corporation 2021 Long-Term 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 February 3, 2022)*
10.3.4	Western Digital Corporation 2021 Long-Term Incentive Plan Non-Employee Director Restricted Stock Unit Grant Program, as amended November 22, 2021 (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 February 3, 2022)*
10.4	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)*
10.5	SanDisk Corporation 2013 Incentive Plan (Filed as Exhibit 4.1 to the Company's Registration Statement on Form S-8 (File No. 333-211420) with the Securities and Exchange Commission on May 17, 2016)*

Exhibit Number	Description
10.6	Amended and Restated Deferred Compensation Plan, amended and restated effective January 1, 2013 (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 2, 2012)*
10.7	Western Digital Corporation Amended and Restated Change in Control Severance Plan, amended and restated as of May 24, 2021 (Filed as Exhibit 10.6 to the Company's Annual Report on Form 10-K (File No. 1-08703) with the Securities and Exchange Commission on August 27, 2021)*
10.8	Western Digital Corporation Amended and Restated Executive Severance Plan, amended and restated as of May 24, 2021 (Filed as Exhibit 10.7 to the Company's Annual Report on Form 10-K (File No. 1-08703) with the Securities and Exchange Commission on August 27, 2021)*
10.9	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)*
10.10	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)*
10.11	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)*
10.12	Offer Letter, dated as of February 18, 2020, to David Goeckeler (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 8, 2020)*
10.13	Special Retention Agreement, dated as of August 26, 2019, with Michael C. Ray (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, 2020)*
10.14	Offer Letter, dated as of December 14, 2021, to Wissam Jabre (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 4, 2022)*
10.15	Letter Agreement, by and among Western Digital Corporation and Elliott Investment Management L.P., dated June 7, 2022 (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 June 8, 2022)
10.16	Restatement Agreement, dated January 7, 2022, by and among Western Digital Corporation, JPMorgan Chase Bank, N.A., as administrative agent, and the lenders party thereto (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 May 4, 2022)*
10.17	Flash Alliance, Master Agreement dated as of July 7, 2006, by and among SanDisk Corporation, Toshiba Corporation and SanDisk (Ireland) Limited (Filed as Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 3, 2022)##
10.18	Operating Agreement of Flash Alliance, Ltd., dated as of July 7, 2006, by and between Toshiba Corporation and SanDisk (Ireland) Limited (Filed as Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q (File No. 1-08703) with the Securities and Exchange Commission on February 3, 2022)##
10.19	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)#
10.20	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)#
10.21	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)#
10.22	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)#
10.23	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 (Filed as Exhibit 10.21 to the Company's Annual Report on Form 10-K (File No. 1-08703) with the Securities and Exchange Commission on August 27, 2019)##

Exhibit Number	Description
10.24	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)#
10.25	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)#
10.26	Flash Forward Master Agreement, dated as of July 13, 2010, entered into by and among, on one side, Toshiba Corporation and, on the other side, SanDisk Corporation, and SanDisk Flash B.V.†##
10.27	Operating Agreement of Flash Forward, Ltd, dated as of March 1, 2011, between Toshiba Corporation and SanDisk Flash B.V.†##
10.28	FFL Commitment and Extension Agreement, dated as of December 12, 2017, by and among Toshiba Memory Corporation, Western Digital Corporation, SanDisk LLC and SanDisk Flash B.V.†##
10.29	FFL Second Commitment and Extension Agreement, dated as of May 15, 2019, 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.†##
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 - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL 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†
104	Cover Page Interactive Data File - formatted in Inline XBRL and contained in Exhibit 101

† 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/ Gene Zamiska
Gene Zamiska
Senior Vice President, Global Accounting and Chief Accounting Officer
(Principal Accounting Officer)

Dated: August 24, 2022

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
<u>/s/ David V. Goeckeler</u> David V. Goeckeler	Chief Executive Officer, Director (Principal Executive Officer)	August 24, 2022
<u>/s/ Wissam Jabre</u> Wissam Jabre	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	August 24, 2022
<u>/s/ Gene Zamiska</u> Gene Zamiska	Senior Vice President, Global Accounting and Chief Accounting Officer (Principal Accounting Officer)	August 24, 2022
<u>/s/ Matthew E. Massengill</u> Matthew E. Massengill	Chairman of the Board	August 24, 2022
<u>/s/ Kimberly E. Alexy</u> Kimberly E. Alexy	Director	August 24, 2022
<u>/s/ Thomas Caulfield</u> Thomas Caulfield	Director	August 24, 2022
<u>/s/ Martin I. Cole</u> Martin I. Cole	Director	August 24, 2022
<u>/s/ Tunç Doluca</u> Tunç Doluca	Director	August 24, 2022
<u>/s/ Paula A. Price</u> Paula A. Price	Director	August 24, 2022
<u>/s/ Stephanie A. Streeter</u> Stephanie A. Streeter	Director	August 24, 2022
<u>/s/ Miyuki Suzuki</u> Miyuki Suzuki	Director	August 24, 2022

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 HAS BEEN IDENTIFIED IN THIS DOCUMENT WITH A PLACEHOLDER IDENTIFIED BY THE MARK “[***]”.

Execution Version

FLASH FORWARD MASTER AGREEMENT

Dated as of July 13, 2010

by and among

TOSHIBA CORPORATION,

SANDISK CORPORATION

and

SANDISK FLASH B.V.

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This **FLASH FORWARD MASTER AGREEMENT**, dated as of July 13, 2010, is entered into by and among, on one side, TOSHIBA CORPORATION, a Japanese corporation (“Toshiba”), and, on the other side, SANDISK CORPORATION, a Delaware corporation (“SanDisk Corporation”), and SANDISK FLASH B.V., a company organized under the laws of The Netherlands (“SanDisk Flash,” and collectively with SanDisk Corporation, “SanDisk” and SanDisk together with Toshiba, the “Parties”).

WHEREAS, pursuant to that certain Flash Partners Master Agreement by and among Toshiba, SanDisk Corporation and SanDisk (Cayman) Limited, dated as of September 10, 2004 (the “FP Master Agreement”), and the agreements referenced therein, as amended by the JVRA (as hereinafter defined), the Parties have had a collaboration for development and manufacture of Y3 NAND Flash Memory Products (as defined in the FP Master Agreement);

WHEREAS, pursuant to that certain Flash Alliance Master Agreement by and among Toshiba, SanDisk Corporation and SanDisk (Ireland) Limited, dated as of July 7, 2006 (the “FA Master Agreement”), and the agreements referenced therein, as amended by the JVRA, the Parties have had a collaboration for development and manufacture of Y4 NAND Flash Memory Products (as defined in the FA Master Agreement);

WHEREAS, the Parties desire to extend their collaboration to encompass (i) additional joint development and manufacture of Y5 NAND Flash Memory Products (as hereinafter defined) by a new joint venture company, (ii) possible joint production of R/W (as hereinafter defined) to be produced at the wafer fabrication facility known as “Y5” by the new joint venture company and (iii) the other matters discussed herein; and

WHEREAS, in order to realize these goals, the Parties desire to consummate or cause to be consummated the transactions described in this Agreement, and any other transactions which the Parties may from time to time consider necessary or appropriate to carry out the intent of the Parties as expressed herein.

NOW, THEREFORE, the Parties agree as follows:

1. Definitions and Interpretation

1.1 Certain Definitions.

- (a) Capitalized terms used but not defined in this Agreement shall have the respective meanings assigned to them in Appendix A (Definitions, Rules of Construction and General Terms and Conditions).
- (b) As used herein, the term “Agreement” means this Flash Forward Master Agreement together with any Exhibits, Schedules, Appendices and Attachments hereto.

- 1.2 Additional Definitions. The following capitalized terms used in this Agreement shall have the respective meanings assigned in this Agreement:

<u>Term</u>	<u>Defined In</u>
3D Collaboration Agreement	Section 2.1(c)(v)
3D Memory	Section 3.2(b)(i)
3D Memory Products	Section 3.2(b)(ii)
Acquiring Party	Section 9.1(d)
Adjustment Payment	Section 7.3
Agreement	Section 1.1(b)
Alternative Use	Section 6.3(a)(iii)
AMC	Section 6.8(a)(i)

Amendment No. 5 to Patent Cross License Agreement	Section 2.1(c)(iii)
Building Depreciation Prepayment	Section 8.2(a)(iii)(A)
Business Plan	Section 5.1(a)
Capital Interests Purchase Agreement	Section 2.1(b)(i)
Catch-Up Space	Section 6.7(a)(iv)
Closing	Section 2.1(a)
Common R&D Agreement	Section 2.1(c)(i)
Common R&D Development Expenses	Section 6.8(a)(i)
Costs	Section 6.3(a)(iii)
Cross License Agreement	Section 2.1(c)(iii)
Defaulting Party	Section 6.12(d)
Designated Individuals	Section 6.3(b)(ii)
EC Compensation	Section 6.6(b)(i)(D)
EC Party or Excess Capacity Party	Section 6.6(b)(i)
Embedded NAND Product	Section 6.6(c)
Employer	Section 6.10(b)(vii)
Engineers	Section 6.10(a)(ii)
Environmental Indemnification Agreement	Section 2.1(b)(vii)
Equipment	Section 6.3(a)(iii)
Equivalent Lot	Section 7.4(e)
Evaluation Wafers	Section 6.8(a)(iv)
FA Master Agreement	Recitals
FF Foundry Agreement	Section 2.1(b)(iv)
FF Headcount Plan	Section 6.10(a)(i)
FF Interests	Section 4.2(a)
FF Operating Agreement	Section 2.1(b)(ii)
FF Operative Documents	Section 2.1(b)
FF Patent Indemnification Agreement	Section 2.1(b)(vi)
FF Purchase and Supply Agreements	Section 2.1(b)(v)
FF Termination Date	Section 9.1(b)
Financing	Section 6.12(b)(iii)
Fixed Manufacturing Costs	Section 7.4(a)(i)
Flash Forward	Section 2.1(b)
FP Master Agreement	Recitals
Headcount Working Group	Section 6.10(a)(iii)
ICs	Section 3.2(a)(i)
Intellectual Property	Section 4.7
Investing Party	Section 6.3(a)(ii)
Investment Plan	Section 6.3(b)(i)
[***]	Section 2.1(c)(iv)
JMDY Development Expenses	Section 6.8(a)(iv)
Joint Operative Documents	Section 2.1(c)
Joint Tool Procurement Team	Section 6.1(a)
[***]	Section 3.3(a)(i)

[***]	Section 3.3(a)(ii)
JV Space	Section 3.3(a)
JV Y5 NAND Flash Memory Products	Section 3.2(a)(ii)
JV Y5 Wafer Sales Price	Section 8.4(c)(i)
JVRA	Section 2.1(c)(vi)
Leading Party	Section 6.7(a)
Lease Agreement	Section 2.1(b)(viii)
Management Representative	Section 6.9
Master Operative Documents	Section 2.2
NAND	Section 3.2(a)(i)
NAND Flash Memory Integrated Circuits	Section 6.13
NAND Flash Memory Products	Section 3.2(a)(i)
Non-Defaulting Party	Section 6.12(d)
Non-Engineer SanDisk Team Members	Section 6.10(b)(ii)
Non-Investing Party	Section 6.3(a)(ii)
Non-JV Space	Section 3.3(b)
Non-NAND Products	Section 3.2(b)(iv)
Non-Originating Party	Section 6.6(e)
Originating Party	Section 6.6(e)
Parties	Heading
Phase I	Section 3.3
[***]	Section 6.7(a)(i)(B)
Phase I Investing Party	Section 6.3(a)(i)
Phase I Minimum RUP Commitment	Section 6.3(a)(i)
[***]	Section 6.3(a)(i)
Phase II	Section 3.3
[***]	Section 6.7(a)(ii)
Phase II Construction Plan Notice	Section 6.7(a)(i)(A)
Phase II Investing Party	Section 6.3(a)(ii)
Phase II Minimum RUP Commitment	Section 6.3(a)(ii)
Phase II Non-Investing Party	Section 6.3(a)(ii)
Process Technology	Section 6.2(a)
Product Development Agreement	Section 2.1(c)(ii)
Proposal	Section 6.3(c)(i)
Proprietary NAND Flash Memory Products	Section 6.6(d)
Purchased Capacity	Section 6.7(c)
Qualification Wafers	Section 6.8(a)(v)
R/W	Section 3.2(b)(iii)
Requesting Party	Section 9.1(d)(i)
Reservation Option	Section 6.7(a)
Reservation Payment	Section 6.7(b)
Restructuring Costs	Section 9.1(j)(ii)(B)
RMPA	Section 2.1(c)(x)
SanDisk	Heading

SanDisk Corporation	Heading
SanDisk Engineers	Section 6.10(a)(ii)
SanDisk Financing	Section 6.12(b)(iii)
SanDisk Flash	Heading
SanDisk Flash-Flash Forward Services Agreement	Section 2.1(b)(xi)
SanDisk Foundry Agreement	Section 2.1(c)(vii)
SanDisk Purchase and Supply Agreement	Section 2.1(b)(v)
***]	Section 3.3(b)(ii)
***]	Section 3.3(b)(ii)
SanDisk Share	Section 9.1(j)(ii)(A)
SanDisk Team	Section 6.10(b)
Selling Party	Section 9.1(d)
Shortfall Quarter	Section 7.3
Start-Up Costs	Section 7.1
***]	Section 7.3
Termination Capacity	Section 9.1(d)(i)
Third Party Sale	Section 6.3(a)(iii)
Threshold NAND Capacity Ratio	Section 7.4(b)
Toshiba	Heading
Toshiba Engineers	Section 6.10(a)(ii)
Toshiba Financing	Section 6.12(b)(iii)
***]	Section 3.3(b)(i)
***]	Section 3.3(b)(i)
Toshiba Purchase and Supply Agreement	Section 2.1(b)(v)
Toshiba's Cost of Debt	Section 8.2(b)
Toshiba-Flash Forward Services Agreement	Section 2.1(b)(x)
Toshiba-SanDisk Flash Services Agreement	Section 2.1(b)(ix)
Trailing Party	Section 6.7(a)
Unilateral Expansion	Section 3.3(b)(iii)
Unilateral Expansion Space	Section 3.3(b)(iii)
Variable Manufacturing Costs	Section 7.4(a)(ii)
Y3 NAND Flash Memory Products	Section 3.2(a)(iii)
Y3 Ramp-Up Plan	Section 6.5(a)(i)(E)
Y4 NAND Flash Memory Products	Section 3.2(a)(iii)
Y4 Ramp-Up Plan	Section 6.5(a)(i)(E)
Y5 Capacity Ratio	Section 7.4(c)
Y5 Direct R&D Development Products	Section 6.8(a)(iii)
Y5 Facility or Y5	Section 3.1
Y5 NAND Capacity Ratio	Section 7.4(d)
Y5 NAND Flash Memory Products	Section 3.2(a)(ii)

- 1.3 Rules of Construction and Documentary Conventions. The rules of construction and documentary conventions and general terms and conditions set forth in Appendix A shall apply to this Agreement.

- 1.4 Precedence. The terms and provisions of this Agreement are binding on the Parties; *provided, however*, that to the extent that a description in this Agreement of another agreement (whether an FF Operative Document or otherwise) conflicts with or differs from the provisions of that agreement, then the provisions of that agreement shall control as to such conflict or difference unless this Agreement expressly amends such other agreement or provision, as the case may be.

2. Closing and Post-Closing Transactions

2.1 Closing Transactions.

- (a) Closing. The Parties shall effect the transactions set forth in this Section 2.1, all of which shall occur as soon as practicable after the date hereof and upon the consummation of the transactions contemplated by the Capital Interests Purchase Agreement (as defined below) and subject to the terms and conditions set forth therein unless otherwise stipulated (the effecting of such transactions, collectively, the “Closing”).
- (b) Flash Forward Documents. Unless otherwise indicated in this Section 2.1(b), as of the Closing Date, the Parties shall enter into or cause to be entered into or otherwise become effective the following agreements and documents (collectively with this Agreement, the “FF Operative Documents”) to apply to their joint development, manufacture and selling of Y5 NAND Flash Memory Products by and through Flash Forward, Ltd., a Japanese *godo kaisha* (“Flash Forward”) (the description of each document below is for reference only and shall not be used in interpreting any such document):
- (i) a Capital Interests Purchase Agreement between Toshiba and SanDisk Flash, substantially in the form of Exhibit A1 (the “Capital Interests Purchase Agreement”), and which concerns the sale by Toshiba and purchase by SanDisk Flash at the Closing of 49.9% of the FF Interests;
 - (ii) an Operating Agreement between Toshiba and SanDisk Flash, substantially in the form of Exhibit A2 (the “FF Operating Agreement”), and which concerns governance of Flash Forward;
 - (iii) Articles of Incorporation of Flash Forward in the form of Exhibit A to the FF Operating Agreement;
 - (iv) a Foundry Agreement between Flash Forward and Toshiba, reflecting terms and conditions mutually agreed between the Parties (the “FF Foundry Agreement”);
 - (v) a Purchase and Supply Agreement, by and between Flash Forward and SanDisk Flash (the “SanDisk Purchase and Supply Agreement”) and a Purchase and Supply Agreement, between Flash Forward and Toshiba (the “Toshiba Purchase and Supply Agreement”) and together with the SanDisk Purchase and Supply Agreement, the “FF Purchase and Supply Agreements”), which shall reflect terms and conditions mutually agreed between the Parties and which concern the forecasting and purchase commitments by SanDisk Flash and Toshiba, respectively, of Y5 NAND Flash Memory Products;
 - (vi) a Patent Indemnification Agreement among SanDisk Corporation, [***] and Toshiba, dated as of the date hereof, in the form of Exhibit A3 (the “FF Patent Indemnification Agreement”), and which concerns patent indemnification obligations of Toshiba in favor of SanDisk, and certain contribution obligations of SanDisk with respect to Y5 NAND Flash Memory Products and 3D Memory Products;

- (vii) a Mutual Contribution and Environmental Indemnification Agreement between SanDisk Corporation and Toshiba, dated as of the date hereof, in the form of Exhibit A4 (the “Environmental Indemnification Agreement”), and which concerns indemnification obligations of the parties thereto in favor of one another with respect to Flash Forward and the Yokkaichi Facility (as defined in Appendix A);
 - (viii) a Lease Agreement between Flash Forward and Toshiba, as owner of the Yokkaichi Facility, substantially in the form of Exhibit A5 (the “Lease Agreement”), and which concerns the leasing of Flash Forward’s equipment to Toshiba as owner of the Yokkaichi Facility;
 - (ix) a Services Agreement between SanDisk Flash and Toshiba, substantially in the form of Exhibit A6 (“Toshiba-SanDisk Flash Services Agreement”), and which concerns Toshiba’s provision of certain services to SanDisk and SanDisk Flash’s payment to Toshiba for such services;
 - (x) a Services Agreement between Flash Forward and Toshiba, as owner of the Yokkaichi Facility, substantially in the form of Exhibit A7 (the “Toshiba-Flash Forward Services Agreement”), and which concerns Toshiba’s provision of certain services to Flash Forward and Flash Forward’s payment to Toshiba for such services; and
 - (xi) a Services Agreement between Flash Forward and SanDisk Flash, substantially in the form of Exhibit A8 (“SanDisk Flash-Flash Forward Services Agreement”), and which concerns SanDisk Flash’s provision of certain services to Flash Forward and Flash Forward’s payment to SanDisk Flash for such services.
- (c) Joint Operative Documents. The Parties acknowledge and agree that the following agreements shall remain in force or be amended or executed as indicated below and shall apply generally to the Parties’ collaboration with respect to NAND Flash Memory Products, 3D Memory Products and related products (collectively, the “Joint Operative Documents”):
- (i) the Fourth Amended and Restated Common R&D and Participation Agreement between the SanDisk Corporation and Toshiba (the “Common R&D Agreement”), which shall reflect terms and conditions mutually agreed between the Parties and which concerns collaboration between the Parties with respect to research and development activities;
 - (ii) the Third Amended and Restated Product Development Agreement between the SanDisk Corporation and Toshiba (the “Product Development Agreement”), which shall reflect terms and conditions mutually agreed between the Parties and which concerns collaboration between SanDisk Corporation and Toshiba with respect to product development activities;
 - (iii) an Amendment No. 5 to the Patent Cross License Agreement, dated as of the date hereof, between SanDisk Corporation and Toshiba (the “Amendment No. 5 to Patent Cross License Agreement”), a copy of which is Exhibit B, amending that certain Patent Cross License Agreement between SanDisk Corporation and Toshiba, dated as of July 30, 1997 (as previously amended, the “Cross License Agreement”), and which concerns certain patent licenses granted by SanDisk Corporation and Toshiba to one another;
 - (iv) the Amended and Restated Joint Memory Development Yokkaichi Agreement between SanDisk Corporation and Toshiba (the “JMDY Agreement”), which shall reflect terms and conditions mutually agreed between the Parties and

which concerns the Parties joint development project to cooperate on the development of a pilot line at the Y4 Facility;

- (v) the 3D Collaboration Agreement, dated as of June 13, 2008, between SanDisk Corporation and Toshiba (the “3D Collaboration Agreement”), which concerns the Parties further expansion of their collaboration through a project for the joint development of and technical collaboration on 3D Memory;
- (vi) the Joint Venture Restructure Agreement, dated as of January 29, 2009, among SanDisk Corporation and certain of its affiliates, Toshiba Corporation, Flash Alliance and Flash Partners (the “JVRA”), in which the Parties restructured Flash Partners and Flash Alliance and amended the FP Operative Documents and FA Operative Documents;
- (vii) the SanDisk Foundry Agreement, dated as of January 29, 2009, between SanDisk Corporation and Toshiba Corporation (the “SanDisk Foundry Agreement”), in which Toshiba agreed to build certain products for SanDisk;
- (viii) [***]
- (ix) the FVCJ Wind-Down Agreement, dated as of June 16, 2008, by and between Toshiba Corporation and SanDisk Corporation; and
- (x) an Amended and Restated Raw Materials Purchase Agreement by and among SanDisk Corporation and certain of its Affiliates and Toshiba Corporation (the “RMPA”), in which the Parties shall agree how to allocate the costs for certain raw materials.

2.2 **Further Assurances.** Following the Closing, each Party shall, and shall cause its Affiliates and Flash Forward to, take all reasonable actions necessary or appropriate to effectuate the transactions contemplated by this Agreement, the FF Operative Documents and the Joint Operative Documents (collectively, the “Master Operative Documents”), and to obtain (and cooperate with the other Party in obtaining) any Governmental Action or third party consent required to be obtained or made by it in connection with any of the transactions contemplated by the Master Operative Documents; *provided*, that no Burdensome Condition shall be made to exist with respect to such Party or any of its Affiliates in connection therewith.

2.3 **Continuation of FP and FA Documents.** The Parties agree that unless otherwise expressly stated herein (a) neither the FA Operative Documents nor the FP Operative Documents shall affect the interpretation of this Agreement, the governance or operation of Flash Forward or the Y5 Facility and (b) the FF Operative Documents shall not affect the interpretation of the FA Master Agreement and the FP Master Agreement (in each case as amended by the JVRA), the governance or operation of Flash Alliance or the governance or operation of Flash Partners.

3. Purpose and Products of Flash Forward and Rights to Y5 Production Space

3.1 **Purpose.** The Parties acknowledge and agree that the purpose of the Master Operative Documents and Flash Forward is the manufacture, including by subcontract to Toshiba pursuant to the FF Foundry Agreement, and sale to Toshiba and SanDisk Flash of NAND Flash Memory Products manufactured at the facility known by the Parties as “Y5” (the “Y5 Facility” or “Y5”), which is a part of the Yokkaichi Facility, as well as to set forth each of SanDisk’s and Toshiba’s rights to Y5 Facility production.

3.2 Products. The following types of products will be produced by Flash Forward at the Y5 Facility:

(a) NAND Flash Memory Products.

- (i) “NAND Flash Memory Products” or “NAND,” as used herein, are NAND (both binary and MLC Flash Memory) Flash Memory Integrated Circuits (“ICs”), excluding any products with process design rules generally greater than [***]. Embedded ICs incorporating NAND Flash Memory Products shall be considered to constitute “NAND Flash Memory Products” if the main function and value of such IC is flash memory, but shall not be considered to constitute “NAND Flash Memory Products” if the main function and value of such IC is logic. For the purpose of the foregoing, the “main function and value” of any product shall be considered to be flash memory if (x) the total NAND flash memory array area is greater than [***] of the total die area or (y) the product is a cut-down or derivative of a standard NAND Flash Memory Product.
- (ii) NAND Flash Memory Products manufactured at the Y5 Facility are referred to as “Y5 NAND Flash Memory Products.” “JV Y5 NAND Flash Memory Products” are Y5 NAND Flash Memory Products which will be produced in the JV Space (under the FF Foundry Agreement between Flash Forward and Toshiba) for sale to Toshiba and SanDisk pursuant to the FF Purchase and Supply Agreements.
- (iii) NAND Flash Memory Products manufactured at the Y3 Facility are referred to as “Y3 NAND Flash Memory Products,” and NAND Flash Memory Products manufactured at the Y4 Facility are referred to as “Y4 NAND Flash Memory Products”.

(b) Other Products.

- (i) “3D Memory” has the meaning given in the 3D Collaboration Agreement.
- (ii) “3D Memory Products” has the meaning given in the 3D Collaboration Agreement.
- (iii) “R/W” has the meaning given in the 3D Collaboration Agreement.
- (iv) “Non-NAND Products” means any technology or product other than NAND Flash Memory Products.
- (v) [***]

(c) Each Party shall be permitted to market and sell all NAND Flash Memory Products and R/W, subject to the limitations set forth in [***], to any third party in any form, including chips, packaged devices, wafers, die and cards.

3.3 Phases I and II; Rights to Y5 Facility Production Capacity Space. The Y5 Facility shall consist of a first phase (“Phase I”) with manufacturing capability for an estimated [***] Equivalent Lots per month, and, upon notice by Toshiba to SanDisk [***] a second phase (“Phase II”) currently planned to be substantially similar in size and Equivalent Lot capacity. If Toshiba shall not have given notice of its approval of Phase II by [***], or such other date as is agreed by the Parties, then, unless otherwise agreed between the Parties [***] disregarded and the costs associated with Phase II, such as, land acquisition costs, land preparation costs, foundation costs and infrastructure costs, in each case which would not have been incurred if not for Phase II, [***]. In each of Phase I and Phase II, the Parties shall have the rights to invest

and secure production capacity and clean room space as follows, subject to [***], the other provisions of this Agreement and subsequent written agreement between the Parties:

- (a) IV Space. Flash Forward shall have the right to invest in and secure the production capacity and/or clean room space in each phase [***] as set forth below.
- (i) Flash Forward shall have the right to invest in all production capacity of Phase I and Phase II that is not yet dedicated to [***] for the production of [***] with the amount of such investment subject to adjustments provided for in this Agreement or in a Business Plan or as otherwise agreed by the Parties in writing, to be manufactured by Flash Forward and purchased by either SanDisk or Toshiba pursuant to the applicable FF Purchase and Supply Agreement dated as of the date of this Agreement (the clean room space actually so utilized at any time, the [***]).
- (ii) Flash Forward shall have the right to invest in up to approximately [***] of the clean room space in Phase II for the production of [***], such amount subject to adjustments provided for in this Agreement or in a Business Plan or otherwise agreed by the Parties in writing (the space actually so utilized at any time, the [***]).
- (b) [***]. Each of SanDisk and Toshiba shall have the right to invest in and secure the clean room space in each phase [***] as follows:
- (i) Toshiba [***]. Toshiba shall have the right to invest in up to approximately [***] of the clean room space in each of Phase I and Phase II for the production by Toshiba [***], subject to adjustments provided for in this Agreement or otherwise agreed by the Parties in writing.
- (ii) SanDisk [***]. SanDisk shall have the right to invest in up to approximately [***] of the clean room space in each of Phase I and Phase II for the production by SanDisk [***] subject to adjustments provided for in this Agreement or otherwise agreed by the Parties in writing.
- (iii) Unilateral Expansion Space. Subject to adjustments provided for in this Agreement or otherwise agreed by the Parties in writing, if a Party exercises a right to proceed unilaterally in expanding capacity in the Y5 Facility [***] shall be utilized in production by the Party exercising such Unilateral Expansion right.
- (c) [***] Priority. [***] and there shall be no restriction on Flash Forward's ability to expand [***] or a Party's ability to make [***] is already fitted out and producing wafers.

4. Representations and Warranties of the Parties

Except as may be disclosed in disclosure schedules attached to this Agreement, each Party represents and warrants to the other Party, as of the Closing, as follows:

4.1 Organization, Ownership Interest, etc.

- (a) It and each of its Affiliates that is a party to any Master Operative Document is duly organized, validly existing and in good standing under the laws of its jurisdiction of organization or incorporation and has the power and authority to carry on its business as conducted on the date hereof, to own or hold under lease its properties and to enter into and perform its obligations under each Master Operative Document to which it is a party.

- (b) It and each of its Affiliates that is a party to any Master Operative Document is duly qualified to own or lease its properties and generally to conduct its business as currently, or as proposed under the Master Operative Documents to be, conducted in each jurisdiction necessary for purposes of the transactions contemplated by the Master Operative Documents, except where failure to so qualify would not have a material adverse effect on either Party or Flash Forward.

4.2 Authorization; No Conflict.

- (a) It and each of its Affiliates has duly authorized by all necessary action (i) the execution, delivery and performance of each Master Operative Document to which it or any of its Affiliates is a party and (ii) the exercise of its rights as a holder of capital interests (*mochibun*) of Flash Forward (the “FF Interests”) to approve the execution, delivery and performance by Flash Forward of each Master Operative Document to which it is a party and for which the approval of the holders of FF Interests is required.
- (b) Its and each of its Affiliates’ execution and delivery of each Master Operative Document to which it is a party, its and each of its Affiliates’ consummation of the transactions contemplated thereby and its and each of its Affiliates’ compliance therewith does not and will not (i) require any approval of its or any of such Affiliates’ stockholders or any approval or consent of any trustee or holder of any of its or any of such Affiliates’ Indebtedness or obligations, (ii) contravene any Governmental Rule applicable to or binding on it or any of such Affiliates or any of its or their properties if such contravention would have a material adverse effect on it or any of such Affiliates or on its or their ability to perform any of its or any of such Affiliates’ obligations under any Master Operative Document, (iii) contravene or result in any breach of, or constitute any default, with or without the passage of time, the giving of notice or both, under its charter or by-laws, or contravene or result in any breach of or constitute any default under, or result in the creation of any Lien (other than Permitted Liens) upon any of its or any of such Affiliates property or the property of Flash Forward under, any material indenture, mortgage, chattel mortgage, deed of trust, conditional sales contract, loan or credit agreement, non-compete agreement, license agreement, partnership or joint venture agreement or other material agreement or document to which it or any of such Affiliates is a party or by which it or any of such Affiliates or any of its or their properties is or is intended to be bound or by which Flash Forward or any of its properties is or is intended to be bound, (iv) require any negotiation with, or notice to, any labor union or violate, or require any procedure to be followed under, any collective bargaining or other agreement with employees or (v) require any Governmental Action (other than immaterial Governmental Actions such as routine qualifications to do business intended to be obtained as needed or Governmental Actions needed in connection with the construction and operation of the Y5 Facility), except, in each case described in clauses (i) through (v) above, such as have been duly obtained, made, taken or otherwise accomplished and which are in full force and effect. All consents and approvals of any Governmental Authority (other than immaterial Governmental Actions such as routine qualifications to do business intended to be obtained as needed or Governmental Actions needed in connection with the operation of the Y5 Facility) or other third Person necessary or advisable for such Party or any of its Affiliates to consummate in all material respects the transactions contemplated by the Master Operative Documents have been obtained. No Burdensome Condition exists with respect to such Party, any of its Affiliates or Flash Forward in connection with the transactions contemplated by the Master Operative Documents.

4.3 Enforceability.

- (a) It has duly executed and delivered this Agreement and, upon the execution and delivery of this Agreement by the other Party, this Agreement will constitute its legal,

valid and binding obligation, 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).

- (b) It and each of its Affiliates have duly executed and delivered each other Master Operative Document to which it or any such Affiliate is a party and, upon the execution and delivery of each such other Master Operative Document by each other party thereto, each such other Master Operative Document will constitute its legal, valid and binding obligation, enforceable against it or its Affiliates 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).
- 4.4 Proceedings. 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 any of its Affiliates that is a party to any Master Operative Document or, on the conduct of the business of Flash Forward following the Closing as contemplated in the Master Operative Documents or on it or any of its Affiliates' ability to perform any material obligation under any Master Operative Document.
- 4.5 Litigation; Decrees. Except as set forth in Schedule 4.5, there are no lawsuits, arbitrations or other legal proceedings pending, or to its knowledge threatened, by or against or affecting it or any of its Affiliates or any of their respective properties 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 Flash Forward following the Closing as contemplated by the Master Operative Documents or (b) relate to any of the transactions contemplated by the Master Operative Documents in a manner which is material to it, any of its Affiliates' or Flash Forward's ability to carry out the transactions contemplated hereby and in the FF Operative Documents or which could have a material adverse effect on the conduct of the business of Flash Forward following the Closing as contemplated in the Master Operative Documents.
- 4.6 Compliance with Other Instruments. Neither it nor any of its Affiliates that is a party to any Master Operative Document is in default in any material respect in the performance of any material obligation, agreement, instrument or undertaking to which it or any of its Affiliates is a party or by which it or any of its Affiliates or any of its or their properties is bound, and there is no such obligation, agreement, instrument or undertaking to which it or any of its Affiliates is a party or by which it or any of its Affiliates or any of its or their properties is bound, in each case which is reasonably likely to have a material adverse effect on the conduct of the business of Flash Forward following the Closing as contemplated by the Master Operative Documents.
- 4.7 Patents and Proprietary Rights. Except as set forth in Schedule 4.7, 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 Flash Forward following the Closing 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 with respect to items referenced in Schedule 4.7, 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.

- 4.8 Compliance with Laws. It and each of its Affiliates has complied and is complying in all material respects with all laws, statutes, permit requirements, licensing requirements, rules and regulations and judicial or administrative decisions, 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 hereunder or under any other Master Operative Document or on the conduct of the business of Flash Forward following the Closing as contemplated by the Master Operative Documents.
- 4.9 Patent Cross Licenses. Except as set forth on Schedule 4.9, with respect to (a) Toshiba, there are no patent cross licenses between it and any third party that would require Flash Forward to make any payment pursuant to Section 8 or Section 10 of Amendment No. 1 to the Cross License Agreement dated May 9, 2000, and (b) SanDisk, there are no patent cross licenses between it and any third party that would require Flash Forward to make any payment pursuant to Section 8 of the Cross License Agreement.

5. Covenants

5.1 Covenants of the Parties. Each Party agrees that, during the term of this Agreement:

- (a) Performance of Obligations. It and each of its Affiliates shall fully and faithfully carry out (i) all its obligations under each Master Operative Document to which it or any Affiliate is a party, and (ii) once agreed, each applicable Business Plan (as defined in the FF Operating Agreement) ("Business Plan").
- (b) Ownership Interest. Except as otherwise expressly permitted by the FF Operating Agreement and this Agreement, it shall not Transfer or permit any of its Affiliates to Transfer all or any portion of its FF Interests (or all or any portion of its interest in any Affiliate through which it beneficially owns its FF Interests) to any Person without the consent of the other Party.

5.2 Public Announcements.

- (a) At or following the Closing, neither Party shall, nor shall it permit any of its Affiliates to, without the prior written consent of the other Party:
- (i) issue any public release, announcement or other document, or otherwise publicly disclose any information or make any public statement, concerning the operations of Flash Forward that refers to the other Party or any of its Affiliates in connection therewith (other than a general reference to affiliation with Flash Forward) that (A) concerns the financial condition or results of operations of Flash Forward other than as required by any Governmental Rule, Japanese GAAP, Japanese GAAS, US GAAP or US GAAS, with respect to the financial disclosure obligations of either Party or (B) disparages either Party, or Flash Forward's performance or reflects negatively on either Party's commitment to either of Flash Forward; or
- (ii) other than as may be required in connection with filings required to be made with Governmental Authorities with respect to the transactions contemplated by the FF Operative Documents pursuant to the Japanese Foreign Exchange and Foreign Trade Law and related regulations, (A) publicly file all or any part of any Master Operative Document or any description thereof or (B) issue or otherwise make publicly available any press release, announcement or other

document that contains Confidential Information belonging to the other Party (or its Affiliates) or Flash Forward, except as may be required by any applicable Governmental Rule, in which case such Party shall (or shall cause the Person required to make such filing to) cooperate with the other Party, to the extent reasonable and practicable, in obtaining any confidential treatment for such filing requested by the other Party.

- (b) Each Party shall use commercially reasonable efforts to grant or deny any approval required under this Section 5.2 within five (5) days of receipt of written request by the other Party; *provided, however*, a Party's failure to respond within said time period shall not be deemed to constitute such Party's approval or consent.
- 5.3 Expenses. Each Party shall bear its own expenses in connection with the negotiation, execution and delivery of the Master Operative Documents.
- 5.4 Undertaking as to Affiliate Obligations. Each Party shall cause all covenants, conditions and agreements to be performed, observed or satisfied by each of its Affiliates that is a party to any Master Operative Document to be fully and faithfully observed, performed and satisfied by such Affiliate, and shall not cause or permit to exist (a) an Event of Default with respect to such Affiliate or (b) except as otherwise permitted by the FF Operating Agreement, any event of dissolution of Flash Forward caused by such Affiliate. Nothing in Section 5.1 or in this Section 5.4 shall be construed to create any right in any Person other than the Parties. Without limiting the generality of the foregoing, SanDisk hereby guarantees the obligations of SanDisk Flash hereunder and under any Master Operative Document to which SanDisk Flash is a party.
- 5.5 Continuity and Maintenance of Operations. During the term of this Agreement, each Party agrees on behalf of itself and each of its Affiliates that is a party to any Master Operative Document to use all reasonable efforts consistent with past practice and policies to (a) preserve intact in all material respects its and their present business operations, (b) keep available the services of its and their key employees as a group, and (c) preserve its relationships with suppliers, licensors, licensees, and others having business relationships with it or them, each to the extent necessary to allow it and such Affiliates to perform its and their obligations under the Master Operative Documents and to allow Flash Forward to conduct its business as contemplated in its most recently approved Business Plan.
- 5.6 Certain Deliveries and Notices. Each Party shall promptly inform in writing the other Party of (a) any event or occurrences which could be reasonably expected to have a material adverse effect on its or any of its Affiliates' ability to perform its or their obligations under any of the Master Operative Documents or the ability of Flash Forward to conduct its business as contemplated in its most recently approved Business Plan, or (b) any breach or failure to satisfy any condition or covenant contained herein or in any other Master Operative Document by such Party or any of its Affiliates.

6. **Agreements Regarding Flash Forward Operation**

6.1 Tool Acquisition.

- (a) Flash Forward Tools. All tools to be used in the JV Space of Y5 shall be purchased by Flash Forward (or a lessor for Flash Forward's benefit as contemplated by Section 6.12(b)) and all such purchases shall be agreed upon by the Parties. Toshiba shall, from the Toshiba Semiconductor Company headquarters [***] provide Flash Forward with tool purchase service and support and negotiate with vendors on Flash Forward's behalf, and SanDisk shall have the right to participate in such negotiations or other tool purchase activities of Toshiba with respect to the JV Space [***]. For

such purpose, a joint SanDisk/Toshiba tool procurement team (“Joint Tool Procurement Team”) will be formed and each member of the team will have total participation, visibility and responsibility in tool selection and procurement negotiations, including tool evaluation activities of the Joint Tool Procurement Team. [***]. Immediately after the effective date of this Agreement, the Parties will establish a process that enables equal participation and equal decision making by the Parties in tool evaluation and purchase for the JV Space (depending on SanDisk’s ability to participate).

(b) Unilateral Expansion Tools.

- (i) A Party undertaking a Unilateral Expansion (for the avoidance of doubt, excluding any Reservation Option exercise) shall have sole discretion and responsibility with respect to the purchase of all tools to be used for such Unilateral Expansion; *provided*, that tool purchases for jointly developed products will take into consideration the then-existing recommendations from the Joint Tool Procurement Team; *provided further*, that the Party undertaking such Unilateral Expansion shall provide the other Party with information concerning the types and quantities of tools purchased. [***].
- (ii) For the avoidance of doubt, in the case of a Reservation Option exercise, tool purchases shall be conducted in accordance with Section 6.1(a), *provided*, however, if the Reservation Option exercise results in a Unilateral Expansion, then SanDisk, as the Party undertaking the Unilateral Expansion shall pay for tools to be used for such Unilateral Expansion.
- (c) [***]. Toshiba shall have sole discretion and responsibility with respect to procurement of additional tools for production of Toshiba [***]. Toshiba shall have the right, in its sole discretion, to make decisions related to and to manage the investment and financing plan, schedule and loading plan relating to, and the operation of, Toshiba’s [***], including manufacturing and production efficiencies and losses in the production of Toshiba [***]; *provided* (i) that any such decisions do not adversely affect the cost of, ramp of, or tool acquisition by Flash Forward and/or a Party effecting a Unilateral Expansion, and (ii) that Toshiba shall ensure that no adverse effect on the wafer cost [***] results from any such decision or management by Toshiba. If Toshiba desires to use any tool [***] in the production of Toshiba [***] Toshiba shall request the consent of the applicable tool owner for the use of such tool, and such consent shall not be unreasonably withheld or delayed. [***].
- (d) [***]. SanDisk shall have sole discretion and responsibility with respect to procurement of additional tools for production of SanDisk [***]. SanDisk shall have the right, in its sole discretion, to make decisions relating to and to manage the investment and financing plan, schedule and loading plan relating to the production of SanDisk [***], including manufacturing and production efficiencies and losses and use of tools in the JV Space for production of SanDisk [***]; *provided further* (i) that any such decisions do not adversely affect the cost of, ramp of, or tool acquisition by Flash Forward and/or a Party effecting a Unilateral Expansion, and (ii) that SanDisk shall ensure that no adverse effect on the wafer cost of [***] results from any such decision or management by SanDisk. If SanDisk desires to use any tool [***] in the production of [***], SanDisk shall request the consent of the applicable tool owner for the use of such tool, and such consent shall not be unreasonably withheld or delayed. [***].
- (e) Use of non-Flash Forward tools by Flash Forward. If Flash Forward desires to use any tool of either SanDisk or Toshiba in the production of R/W, Flash Forward shall request the consent of the applicable tool owner for the use of such tool and such consent shall not be unreasonably withheld or delayed. Flash Forward’s use of such

tool shall be subject to appropriate cost allocation, usage limitations and steps to minimize any potential contamination risk and effect on capacity.

- (f) Tool Layout. Upon SanDisk's reasonable request, Toshiba shall provide a tool layout plan for the Y5 Facility related to: (x) Flash Forward, (y) any SanDisk Unilateral Expansion capacity and (z) SanDisk R/W. Toshiba shall provide SanDisk with appropriate information regarding Toshiba non-JV tools to reasonably demonstrate to the mutual satisfaction of the Parties that any space or capacity allocation is consistent with this Agreement.

6.2 Technology Transfers.

(g) Process Technology.

- (i) The Parties will jointly make available to Flash Forward the process technology developed under the JMDY Agreement, the Product Development Agreement or the Common R&D Agreement and applicable to the manufacturing and testing of NAND Flash Memory Products and R/W ("Process Technology") on a mutually agreed schedule.
- (ii) Transfers of Process Technology and process integration for new processes developed pursuant to the JMDY Agreement and that appear on the JMDY Roadmap (as defined in the JMDY Agreement), including those processes developed at AMC or any other facility in accordance with the JMDY Agreement, will be jointly reviewed and discussed by the Parties and will be made in a mutually satisfactory manner. All process integration for new process originating from AMC will be led by Toshiba employees, to the extent reasonably possible. Toshiba and SanDisk will cause their respective employees to cooperate in achieving an efficient transition from development module to operating process and volume production.
- (iii) The transfer of Process Technology to JV Space shall be deemed complete when the transferred Process Technology passes a reasonable qualification procedure to be mutually agreed upon by the Parties.
- (iv) [***]
- (v) [***]
- (vi) Non-JV Space Process Technology. The manner of Process Technology transfer from JMDY to a Party's Non-JV Space and the conditions associated therewith shall be determined by such Party in its sole discretion; provided, that such Party shall exercise due care and shall comply with all Yokkaichi Facility or otherwise applicable safety and production regulations in effecting such transfer of Process Technology.

6.3 Ramp-Up. The Parties shall expand Y5 Facility NAND Flash Memory Product manufacturing capacity through development of Phase I and Phase II of the Y5 Facility as follows:

(a) Minimum Commitments.

- (i) [***]. The initial [***] L/M in aggregate increases in production capacity of the Y5 Facility shall be considered firmly committed by each Party (*i.e.*, [***] L/M each) as described below [***]. Toshiba shall specify the timing and manner of implementation of [***] and the details shall be reflected in one or more Business Plans that provide for implementing [***]. If SanDisk [***] fails for any reason to make the investment necessary to implement its [***]

share of the [***] then Toshiba (so long as it makes the investment necessary to implement its [***] share of [***]) shall have the right [***] either to maintain this Agreement in effect [***] or [***] in which case (A) [***] and (B) [***] shall apply.

- (ii) [***]. If Toshiba gives notice to SanDisk of [***] to proceed with Phase II, the following terms and conditions shall apply with respect to the ramp-up in Phase II. The initial [***] in aggregate increases in production capacity of Phase II of the Y5 Facility shall be considered [***] as described below [***] shall specify the timing and manner of implementation of [***] and the details shall be reflected in one or more Business Plans that provide for implementing [***]. If SanDisk [***] fails for any reason to make the investment necessary to implement [***] Toshiba (so long as it makes the investment necessary to implement [***] share of [***]) shall have the right, [***] to: (A) maintain this Agreement in effect [***]; (B) maintain this Agreement in effect with respect [***]; or (C) in the event that SanDisk's [***] in Phase I is [***] or less at the time of such failure to [***], in which case (1) [***] and (2) [***] shall apply.
- (iii) Costs of Non-Investment. If [***], then it shall reimburse [***] the costs due to cancellation of any purchase orders the Parties have agreed to place for [***] to the extent such costs cannot be reduced or mitigated [***] commercially reasonable efforts to mitigate the Costs to the fullest extent possible. To the extent [***] alternative use ("Alternative Use") of Equipment, [***] unable to negotiate a termination of an Equipment purchase order and must acquire such Equipment (and will not make Alternative Use of it), [***] will promptly liquidate in one or more arm's length transactions ("Third Party Sale") such Equipment and the positive difference between the cost of such Equipment (including the out-of-pocket costs of conducting the Third Party Sale, such as costs related to de-installing Equipment, compensating a sales broker, delivering the Equipment to the purchaser thereof, etc.) and the proceeds of such Third Party Sale shall constitute Costs. [***] using commercially reasonable efforts to effect a Third Party Sale, the liquidation value of any given Equipment may be small compared to the purchase price for such Equipment given the specialized nature of the Equipment and limited secondary market for wafer manufacture equipment. To the extent [***] is in a commercially reasonable manner able to make Alternative Use or a Third Party Sale of any Equipment at any time after [***] paid the Costs arising from or related to such Equipment, [***] notify [***] of such Alternative Use or Third Party Sale and shall reimburse [***] for the full amount of the Costs paid by [***] with respect to such Equipment. If the net proceeds on the sale of any item of Equipment exceeds the cost thereof, such profit shall reduce amounts otherwise payable [***] under this Section 6.3.
- (b) Failure to Invest as Committed in Investment Plan or Business Plan.
- (i) Investment Plan. After the [***] has been fulfilled by the Parties, once the Parties agree in the form of an Investment Plan (as defined below) approved by the Board of Executive Officers of Flash Forward to make investments to fulfill any given increment of capacity expansion for Flash Forward, if either Party, as the Non-Investing Party, then fails for any reason to make the investment necessary to implement its [***] share of such committed increment of the capacity expansion, then the other Party, [***] as applicable. The term "Investment Plan" shall mean a proposed increment of capacity expansion as set forth in the Business Plan or subsequent mutual agreement between the Parties and presented to the Board of Executive Officers of Flash Forward in accordance with Section 6.3(c).

- (ii) Business Plan. Business Plans and proposals with respect to the adoption of new Business Plans shall describe JV Space capacity expansions to be effected by SanDisk and Toshiba through Flash Forward on a [***] basis. In the event that SanDisk does not approve an Investment Plan providing [***]. Accordingly, the Parties shall cooperate in good faith to agree on and implement the Business Plan in a timely manner in accordance with Section 3.4 of the Operating Agreement. In the event of a failure to either (A) agree on the capacity expansions in a Business Plan or (B) implement any specific capacity expansion set forth in the Business Plan, then the Board of Executive Officers of the Company shall meet and discuss the applicable capacity expansion. If the Board of Executive Officers fails to agree on a solution, then any Member may bring the matter to the attention of the Vice President, Memory Division of Toshiba, and the Chief Operating Officer of SanDisk (the “Designated Individuals”), who will attempt to find a resolution. If the matter has not been resolved within thirty (30) days of referral to the Designated Individuals, the matter will be referred to the Management Representatives for agreement on a final resolution. Any agreement of the Management Representatives on a final resolution will be final and binding and shall be implemented by the Company. In the event that no agreement on a final resolution is reached by the Management Representatives within thirty (30) days after submission of the matter to them, the matter shall be submitted to arbitration in accordance with [***]. The remedies set forth in this Section 6.3(b)(ii) shall constitute the exclusive remedies with respect to [***] in the context of a Business Plan, and no Deadlock shall arise from such failure.
- (c) General Rule; Proposed NAND Capacity Expansions.
- (i) General Rule. After the Parties have fulfilled their respective [***] in Phase I or Phase II, as applicable, if either Party desires to (A) further expand the production capacity of the Y5 Facility, expand or accelerate any capacity increase provided for in a then-agreed Business Plan or otherwise increase the number [***] or (B) otherwise expand its aggregate manufacturing capacity [***], then in each of (A) and (B) above, such Party will [***] to the other Party and will propose to the other Party a plan to make such desired expansion on a 50/50 basis with reasonable terms [***].
- (ii) Expansions within Y5. Expansions of JV NAND Space production may be proposed by either Party in the form of a Proposal and, if and to the extent agreed, shall in due course be reflected in a Business Plan or amendment thereto. If no agreement with respect to joint implementation of the full amount of a proposed expansion of Y5 Facility production capacity beyond any capacity increase provided for in a then-agreed Business Plan is reached within [***] following a Party’s written Proposal of such expansion, the proposing Party may [***]:
- (A) If [***] is the proposing Party, it shall have the right to [***]
- (B) If [***] is the proposing Party, it shall have the right to [***]
- (iii) Other Facility Expansions. If no agreement with respect to a proposed expansion in a facility [***] is reached during [***] day period beginning on the day a Proposal is received by the non-proposing Party, then SanDisk and Toshiba shall cause the chief executive officer of SanDisk and the chief executive officer of Toshiba Semiconductor Company to meet face-to-face at Toshiba’s headquarters, no later than the [***] day following receipt of the Proposal by the non-proposing Party, to develop and agree upon a solution [***]. If no resolution is reached within [***] days after the face-to-face meeting, then (x) with respect to the Y5 Facility, the Parties will continue to

pursue the ramp-up on the terms set forth in [***], (y) the proposing Party will [***]:

(A) If SanDisk is the proposing Party, it shall have the right [***]; and

(B) If Toshiba is the proposing Party, it shall have the right to [***].

6.4 Ramp Up of JV R/W Space in Phase II. If positive verification [***]

(a) is made prior to [***].

(b) is not made prior to [***].

6.5 Capacity.

(a) Priority.

(i) [***]:

(A) from [***], to fulfill the capacity allocated to SanDisk, as provided for under [***]

(B) from [***], to fulfill the capacity allocated to SanDisk, as provided for under [***]

(C) from [***], to fulfill the capacity allocated to SanDisk, as provided for under [***]

(D) from [***] in Y5 [***], and

(E) [***].

(ii) [***]:

(A) from [***], to fulfill the capacity allocated to Toshiba, as provided for under [***]

(B) from [***], to fulfill the capacity allocated to Toshiba, as provided for under [***]

(C) from [***], to fulfill the capacity allocated to Toshiba, as provided for under [***]

(D) [***], and

(E) [***].

(iii) In no event will [***] source NAND Flash Memory Products [***] from a source other than [***] if the effect of such sourcing is the diversion of resources or other (intended or collateral) effects which reduce the economic or other efficiency of the Y3 or Y4 Facility; provided, that sourcing by Toshiba from the Toshiba Capacity (as defined in the JVRA and including, for the avoidance of doubt, any Toshiba Unilateral Expansion Space) shall not be deemed such a diversion of resources or other reduction in efficiency.

(b) [***]. Rule. In no event shall SanDisk's and its Subsidiaries' aggregate manufacturing capacity for NAND Flash Memory Products [***] of the aggregate manufacturing capacity for, and purchases of, (i) [***] from the sources identified [***] and

controlled by [***] plus (ii) [***] from the sources identified in [***] and controlled by [***]. In no event shall purchases of NAND Flash Memory Products by either Party or their respective Subsidiaries [***] be limited by this Section 6.5(b). Manufacturing and purchased capacity under this Section 6.5(b) shall be determined [***].

- (c) Transfer of Technology to External Manufacturing Source. If the Parties mutually agree to secure external manufacturing sources other than the Yokkaichi Facility through joint investment, Flash Forward and Toshiba, as applicable, will jointly transfer the applicable manufacturing technology and know-how to such source. Flash Forward, Flash Alliance and Flash Partners will conduct all negotiations with the external manufacturing source; *provided, however*, the terms and conditions of any agreement shall be subject to prior consultation with and the approval of Toshiba. In connection with any technology transfer to such external source, Toshiba will be reimbursed its mutually agreed transfer costs for assisting in the transfer of manufacturing technology and know-how. If the new capacity secured at such external manufacturing source is requested by only one of the Parties, such Party will pay the transfer costs and be entitled to purchase the full output of Flash Forward products purchased by Flash Alliance, Flash Partners or Flash Forward, as applicable, from such external manufacturing source. If both Parties request such new external capacity, then Flash Alliance, Flash Partners or Flash Forward, as applicable, will pay the transfer costs to Toshiba. Unless otherwise agreed by the Parties in writing, neither Party shall have the right to grant manufacturing licenses to such external manufacturing source or to disclose or transfer to any such external manufacturing source, manufacturing know-how related to the manufacture of Flash Forward products, except through Flash Alliance, Flash Partners or Flash Forward.

6.6 Capacity Sharing Arrangement.

- (a) Equal right to Joint Venture capacity. Each of the Parties will have the right and obligation, through Flash Forward, to utilize fifty percent (50%) of the JV Space products, on an Equivalent Lot basis. The actual monthly NAND Flash Memory Product lot output from the Y5 Facility shall be allocated between Toshiba and SanDisk, as applicable, based on the Y5 NAND Capacity Ratio.
- (b) Alternative use of allotted capacity.
- (i) If a Party is unable to utilize its allotted manufacturing capacity for JV Y5 NAND Flash Memory Products (such Party, an “Excess Capacity” or “EC Party”), it may do any of the following:
- (A) An EC Party may request the other Party to negotiate the terms of transfer of its capacity shortfall to the other Party, which may choose whether to accept such additional capacity and on what terms in its sole discretion.
- (B) An EC Party may use its capacity for Embedded NAND Products, as defined in and subject to Section 6.6(c).
- (C) An EC Party may use its capacity for Proprietary NAND Flash Memory Products and non-Proprietary NAND Flash Memory Products, in accordance with and subject to Sections 6.6(d) and (e).
- (D) An EC Party may produce less than one hundred percent (100%) of its total Equivalent Lot capacity, provided its allocation of costs in this case will be done in accordance with Section 7.4(a)(i) (“EC Compensation”).

- (ii) If both Parties are EC Parties because demand for both Parties' JV Y5 NAND Flash Memory Products are significantly below expectations, the Parties will discuss in good faith whether to permit products which are not JV Y5 NAND Flash Memory Products to be produced in the JV Space; provided that (A) the inability of the Parties to so agree shall not constitute a Deadlock (as defined in the FF Operating Agreement) and (B) the foregoing shall not limit either Party's rights in the remainder of this Section 6.6.
- (c) Either Party shall have the right to use a portion of its total allocated capacity with respect to the JV Space to run a memory product which is not a JV Y5 NAND Flash Memory Product (solely because the NAND flash memory array area is equal to or less than [***] of the total die area ("Embedded NAND Product")) so long as such Embedded NAND Product [***]. If a Party exercises its option to run Embedded NAND Products, it must [***]. No such products may be run if doing so [***]. The conditions stated in Sections 6.6(d) and (e) do not apply to Embedded NAND Products.
- (d) Each Party may use a portion of its total allocated capacity from the JV Space to cause to be manufactured NAND Flash Memory Products which are proprietary to that Party ("Proprietary NAND Flash Memory Products") and which need not be shared with the other Party. Proprietary NAND Flash Memory Products may be produced in the JV Space so long as such products [***]. If a Party exercises such option, it must [***]. No such Proprietary NAND Flash Memory Products may be run if doing so [***]. Each Party shall give the other Party at least ninety (90) days' advance written notice of its intention to use a portion of its allocated capacity to manufacture Proprietary NAND Flash Memory Products and the Parties shall refer the matter to the Board of Executive Officers (as defined in the FF Operating Agreement) for consultation and planning, with the intention to minimize the impact of such allocation. Such notifying Party will limit the output volume of such Proprietary NAND Flash Memory Products to [***] unless it receives the consent of the other Party to an increase in such output volume above such limit.
- (e) Each Party (the "Originating Party") shall inform the other (the "Non-Originating Party") of the development plans by the Originating Party to develop NAND Flash Memory Products, and the Originating Party and the Non-Originating Party shall each refer such matter to the Coordinating Committee (as defined in the Product Development Agreement). If the Coordinating Committee unanimously decides that such planned development shall be undertaken jointly, then the cost of such joint development shall be borne by each Party in accordance with the Product Development Agreement or JMDY Agreement, as applicable, and the NAND Flash Memory Products manufactured following such joint development shall be considered non-Proprietary NAND Flash Memory Products for purposes of Section 6.6(d); *provided, however*, the NAND Flash Memory Products set forth in Exhibit A to the Product Development Agreement shall be deemed to be non-Proprietary NAND Flash Memory Products without any action by the Coordinating Committee. Subject to the foregoing, if the Coordinating Committee does not unanimously decide that such planned development shall be undertaken jointly, then the Originating Party may, at its sole discretion, either (i) transfer to the Non-Originating Party the technology, including the items in Exhibit C to the Product Development Agreement relating to such technology, used to manufacture such NAND Flash Memory Products on a royalty-free basis, whereupon such NAND Flash Memory Products shall be considered non-Proprietary NAND Flash Memory Products, or (ii) treat such NAND Flash Memory Products as Proprietary NAND Flash Memory Products for purposes of Section 6.6(d). In the event the Originating Party elects to treat any NAND Flash Memory Products as Proprietary NAND Flash Memory Products in accordance with the preceding sentence, but thereafter the Coordinating Committee unanimously determines that such Proprietary NAND Flash Memory Products should be developed jointly, the Originating Party shall transfer to the other Party the technology used to

manufacture such NAND Flash Memory Products on reasonable terms and conditions to be mutually agreed upon by the Parties, whereupon such Proprietary NAND Flash Memory Products shall be treated as non-Proprietary NAND Flash Memory Products.

6.7 SanDisk Reservation Option.

- (a) Ramp Flexibility. When [***] initiates one or more [***], such that the total capacity of [***] will be [***] than [***] in Y5 [***] may execute one or more [***] under the following conditions [***]
- (i) [***]. The [***] Party will commit to utilize or release to [***] all or a portion of its Phase I space as set forth below [***] capacity as adjusted [***] for any space that has been released by [***]:
 - (A) The [***] Party will commit to utilize or release [***] all or a portion of its Phase I space at the time of, and for the inclusion in, an annual or amended Business Plan, taking into account the results of [***], available resources, and the time required to effect the necessary ramp-up, among other relevant factors; provided, that neither Party shall have any right to [***] of the Parties to agree with respect to [***]; provided, further, that the [***] shall commit to utilize or release all or a portion of the [***] Phase I space [***] no later than [***] prior to the Phase II building target completion date as set forth in the Phase II Construction Plan Notice (as defined below); provided, that no further [***] shall apply in Phase I. Toshiba may issue a notice of its intention to pursue Phase II construction (a "Phase II Construction Plan Notice") [***] such notice shall include the target building completion date for Phase II. If and to the extent that, on the date when the [***] delivers [***] with respect to the [***] required for it [***] as adjusted for any [***] that has been [***] by the [***] Party, the [***] in Phase I [***] such [***] space of the [***] Party shall be deemed [***].
 - (B) The [***] Party will complete the ramp [***] space no later than [***] after the [***] Party fully [***], unadjusted for any [***] by the [***] Party; provided, however, that the [***] shall be [***] by that [***] between the Parties' start and completion of [***].
 - (ii) Phase II Ramp. The [***] Party will commit to utilize or release to [***] all or a portion of its [***] prior to the date on which the [***] Party [***] which will result in [***], and no further [***] shall apply in Phase II. The [***] Party will complete its [***] no later than [***] after the [***] Party fully [***].
 - (iii) In the event that any of the events that trigger [***] by the [***] Party to commit or release [***], as applicable, pursuant to [***] above is unreasonably [***], then the [***] Party may [***] commit to or release such [***], as applicable, [***]; provided, that no such right of the [***] Party [***] arise in the case where [***] by reason of the [***] Party's [***] space subject the [***].
 - (iv) [***]. Prior to implementing any [***], the [***] Party must first propose such [***] for implementation pursuant to [***]. Solely in the event that [***] refuses to consent to such [***] and/or the [***] does not agree with the [***] Party on the [***] may the [***] Party proceed [***]. Unless otherwise agreed by the Parties, only the [***] Party shall have the right [***] by placing [***] space in the applicable phase that the [***] Party has committed to utilize [***]. At the end of either the Phase I [***] or the Phase II [***], as applicable, any [***] space [***] subject to the general rules [***].

- (v) Operational Efficiencies. Within the framework provided by the FF Operative Documents, the Parties shall cooperate to ensure that there is no significant adverse effect on [***] as a result of the [***] Party's exercise of [***]; provided, that the [***] corresponding to the applicable [***] shall not in and of itself constitute [***].
- (b) Reservation [***]. During the term of each of the Phase I [***] and Phase II [***], the [***] Party shall make [***] for such [***] quarter or portion thereof. The Parties shall cause [***] the other provisions of this Agreement, other than the [***], the [***] per unit of the same product and same design rule shall be the same for both Parties. The obligation for the Phase I [***] shall be required only until the earlier to occur of [***] production capacity is included in the [***] and producing wafers, provided that the next [***] will be prioritized into this space [***] which the [***] Party has released [***], provided that the [***] will only terminate as to that [***] that is released to [***]. The obligation for the Phase II [***] shall be required only until the Phase II [***] has expired. [***].
- (c) Procedure for Catch-Up Expansions. When a [***] Party expands into its [***] and the [***] Party is not simultaneously [***], upon approval by the Board of Executive Officers of Flash Forward, Flash Forward will make [***] on behalf of the [***] Party equal to the proposed expansion by the [***] Party and, upon the consent of the [***] Party, the [***] Party will [***] and Flash Forward will [***] amount of [***] Party's [***] capacity [***], provided that (i) both Parties mutually agree on the Purchased Capacity [***] and (ii) such Purchased Capacity is purchased by [***] from the [***] Party at the [***] and any other costs for installation, hook up and facilitization. [***] amount and [***] of the Purchased Capacity will transfer from [***] Party [***] over a period and at a [***].
- (d) Consideration of Release. Upon [***] request prior to the date that [***] prior to the expected completion of Phase II clean-room space construction and facilitization, [***] shall [***] with respect to its release to [***] of some or all of [***] then-unutilized Phase I [***] for [***] expansion in Phase I, where (i) other than the Phase I [***], the [***] could only next expand into Phase II [***] has reasonable assurance that it can timely continue its ramp in Phase II, provided, that any such release shall be [***] after considering the foregoing factors and that in no event shall [***] in Phase II [***] of total Phase II [***].
- 6.8 Engineering Wafers and Development Expense. Each Party will have full access to all operational and engineering data and reports related to engineering wafers manufactured in the JV Space.
- (a) Engineering wafers and development expenses are defined in five (5) categories: Common R&D Development Expenses, Y5 Direct R&D Development Products, JMDY Development Expenses, Evaluation Wafers and Qualification Wafers (each as defined below); *provided, however*, that if there are any development expenses not falling in these categories and such expenses are not to be charged under the JMDY Agreement or the Product Development Agreement, such expenses shall be appropriately paid or borne between the Parties.
- (i) "Common R&D Development Expenses" means those expenses approved in accordance with [***] that are associated with activities mainly done [***] for the purpose of development of fundamental semiconductor technology. For the avoidance of doubt, in no event shall [***] allocated any costs attributed to [***] unless the project that generated such [***] was on the [***], such expenses are explicitly approved [***], or as otherwise mutually agreed by the Parties (in such case [***] of a project that generated such costs).

- (ii) [***] are those products developed [***] for the purpose of joint product development. R&D costs for [***] shall be allocated to the Parties in accordance with [***]. If similar products have also been manufactured [***] (not including [***]), the R&D costs for such products shall be shared among [***] in accordance with applicable [***].
 - (iii) “[***] Expenses” are those development expenses incurred in accordance with [***] for the purpose of product development. R&D costs for [***] Expenses shall be allocated to the Parties in accordance with [***].
 - (iv) “Evaluation Wafers” are those wafers manufactured [***] for the purpose of [***]. Both Parties are entitled to receive Evaluation Wafers [***]; *however*, the Party responsible for completion of [***] has the right to receive [***] necessary to perform the [***]. The cost of Evaluation Wafers is [***] intended to be shared [***] by the Parties and is therefore included [***] Product manufacturing cost and is subsequently part of the [***].
 - (v) “Qualification Wafers” are those wafers manufactured in the JV Space for the purpose of [***]. The Parties will discuss and agree on the appropriate quantity of Qualification Wafers required for each JV Y5 NAND Flash Memory Product. Each Party shall have the right to receive such quantity of Qualification Wafers [***]. For such Qualification Wafers, [***] will charge the receiving Party pursuant to [***] and the [***], as applicable, a price per wafer equal [***] set forth in the [***]. The Parties intend that the [***] for Qualification Wafers shall not [***] the [***] of production lots in the Y5 Facility. It is understood that by the Parties that each Party’s Qualification Wafers shall come from [***] capacity of lots in the JV Space.
- (b) It is the intent of the Parties that Qualification Wafers manufactured in the JV Space will be allocated [***] between the Parties. [***] will charge the receiving Party, pursuant to the [***] and the FF [***], as applicable, a price per wafer equal to the [***] set forth in the [***].
- 6.9 Management Representatives. Each Party shall designate a person (each a “Management Representative”) and the two so designated shall have the authority to (a) advise Flash Forward with respect to policy and operating matters common to Toshiba and SanDisk as well as on such other matters as Flash Forward may refer to the Management Representatives from time to time, (b) hear and seek to resolve any disputes regarding operational matters or alleged breaches of any Master Operative Documents (including dispute resolution), and (c) take the actions specified to be taken by the Management Representatives in this Agreement or any Master Operative Document.
- 6.10 FF Management Structure and Headcount.
- (a) Flash Forward Headcount Plan and Working Group.
 - (i) The Parties will meet and mutually agree on an overall headcount plan for [***], which will incorporate [***] (the “FF Headcount Plan”).
 - (ii) Each Party is committed to provide (itself or through its Affiliates) [***] of the engineers (other than line engineers), including, but not limited to, device, integration, process and test, included in the FF Headcount Plan (“Engineers”). In addition, Toshiba will use its reasonable best efforts to provide [***] and the Parties will mutually agree on the number of [***]. SanDisk will provide an execution status for the FF Headcount Plan and, in case of any shortage [***] from the number agreed in the FF Headcount Plan, an improvement plan to fulfill such [***] In no case will [***] to SanDisk, Toshiba (including if it

is unable to provide all Engineers not provided by SanDisk or to provide all necessary non-engineers), or Affiliates of SanDisk or Toshiba.

- (iii) The Parties shall establish a working group with equal representation from each Party for the purpose of discussing integration of SanDisk-provided Engineers into the Toshiba Y5 Facility organization with respect to the JV Space, organization structure, updates on SanDisk's and Toshiba's respective hiring of Engineers, and related matters (the "Headcount Working Group"). SanDisk and Toshiba should prepare updates to the FF Headcount Plan through the Headcount Working Group. The Parties acknowledge their general intent to deploy [***] engineering organization at all levels, subject to taking into account the capabilities of the individuals and the needs of the particular position. The Headcount Working Group will meet as and for so long as its members consider necessary. Deployment and positions of Engineers and any other SanDisk personnel at the Y5 Facility and issues and concerns related thereto shall be handled through the Y5 Operating Committee (as defined in the FF Operating Agreement), and the agenda for meetings of the Y5 Operating Committee shall include review and assessment of such issues if requested by either Party.
 - (iv) Recognizing that Japanese language skills will be necessary for Engineers working at the Y5 Facility, SanDisk shall seek to minimize the number of its Engineers seconded to Flash Forward who are not highly proficient in Japanese and for those who are not Japanese speakers SanDisk shall ensure they receive some language training in Japanese at SanDisk's cost before being sent to work at the Y5 Facility.
- (b) With respect to the SanDisk-seconded Engineers (including any seconded from SanDisk Affiliates) and any other SanDisk employees seconded to the Y5 Facility pursuant to the FF Headcount Plan or further agreement with Toshiba (collectively, the "SanDisk Team"), the Parties agree as follows:
- (i) Members of the SanDisk Team who are Engineers shall be integrated by Toshiba at the Yokkaichi Facility and shall work together with Toshiba Engineers to seek to ensure the optimal operation of the Y5 Facility from a cost and technology perspective. To the extent any SanDisk Team member who is an Engineer reasonably follows the properly issued directions of such person's manager at the Y5 Facility and contributes to the success of the Y5 Facility's operations that support Flash Forward to the degree that would be reasonably expected of a Toshiba Engineer in his or her position, [***] member shall be charged to [***]. With respect to such costs, [***] shall reimburse [***] for salaries, bonuses and benefits (other than stock options or other similar equity incentive compensation but including expatriation benefits) in an amount [***].
 - (ii) Members of the SanDisk Team who are not Engineers ("Non-Engineer SanDisk Team Members") shall work with their respective counterparts at the Yokkaichi Facility to facilitate SanDisk's access to the operations of the Y5 Facility as follows. Non-Engineer SanDisk Team Members who support the operations of Flash Forward or the manufacturing of NAND Flash Memory Products shall have full access to the Y5 Facility other than the Toshiba Non-JV Space, and information related to the operations of the Y5 Facility other than the Toshiba Non-JV Space, and reasonable access to other information relevant to Flash Forward or the operations of the Y5 Facility. [***].
 - (iii) Each member of the SanDisk Team may, at all times and in such SanDisk Team member's sole discretion, raise issues with the Y5 Operating Committee (as provided in the FF Operating Agreement) and may communicate with

SanDisk as otherwise contemplated by the Master Operative Documents. If the Y5 Operating Committee is unable to agree on the resolution of an issue raised by a member of the SanDisk Team, it shall be referred to the Board of Executive Officers.

- (iv) Office space used in connection with the JV Space shall be made available for the [***] on a non-discriminatory basis as compared to [***]. The members of the [***] shall be provided with secure and confidential private data and voice linkages [***], consistent with the practice of the Parties in connection with Flash Partners and Flash Alliance).
 - (v) [***].
 - (vi) Either or both of [***] shall be entitled to condition the [***] onto its premises on such [***] member's execution of a nondisclosure and visitor requirements document in the forms to be mutually agreed by the Parties.
 - (vii) SanDisk shall ensure that SanDisk Y5 personnel (including Y5 Engineers) (A) comply with the written safety and security regulations, the other written policies and direct instructions of Toshiba related to site security and information security, as well as any otherwise applicable safety and production regulations (copies of the written Toshiba regulations and policies will be provided to SanDisk upon the request of SanDisk or upon the amendment of such regulations or policies) while such SanDisk Y5 personnel are in Toshiba's facilities and (B) in their operation of the [***] exercise due care and act with the degree of prudence that would be reasonably expected of a Toshiba Engineer in an analogous position. Toshiba will provide safety and security training in Japanese to senior managers of SanDisk at Y5 to ensure that SanDisk Y5 personnel have the right to access [***]. The training of the senior managers shall be in Yokkaichi. The senior managers of SanDisk Y5 personnel will be responsible for providing or delegating, to other SanDisk personnel, in English or Japanese, the safety and security training to other SanDisk Y5 personnel.
 - (viii) All members of the SanDisk Team will remain employees of SanDisk. Each Party will indemnify the other Party and Flash Forward from any claim by any of such Party's employees, consultants or agents (such Party being the "Employer") (A) based on other than willful misconduct of such Employer, its 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.
- (c) [***] members (including employees [***] or any of its Affiliates) who are not located at the [***] who are not located at the [***], are requested by [***] to provide engineering services, their time shall be charged to [***] at mutually agreed rates using the same principle as provided in [***], plus travel expenses.
- 6.11 Non-solicitation of Employees. So long as the business of Flash Forward continues, each Party (and each of its respective Affiliates) shall not, without the prior written consent of the other Party, directly recruit or solicit (a) any employee or director of Flash Forward or (b) any employee of the other Party involved in the Flash Forward business to leave his or her employment with Flash Forward or such other Party prior to the period ending twenty-four (24) months after the FF Termination Date; *provided, however*, that placement of employment advertisements or other general solicitation for employees not specifically targeted to the employees or directors of Flash Forward or such other Party shall not constitute direct recruitment. In the event of the dissolution and liquidation of Flash Forward, either Party (or any Affiliate of either Party) may solicit any former employee of such dissolved and liquidated company, but neither Party (nor any of its Affiliates) shall be required to employ any

such Person. If all of the FF Interests held by one Party are purchased by the other Party or its designee, if requested by the acquiring Party, the Parties shall reach agreement on a reasonable transition plan (without profit to the seller) in connection with the services provided to Flash Forward, as applicable, by employees and contractors of the selling Party.

6.12 Financing.

- (a) [***]. Neither Party will be obligated to make any assurance or guarantee [***]; however, [***] will use its reasonable best efforts to assist [***], to the extent reasonably requested by [***], in securing financing on favorable terms. If either Party is unable to obtain financing, the Parties will meet to discuss in good faith a resolution to such Party's inability to obtain financing. For the avoidance of doubt, [***], and all loans to Flash Forward by the Parties will be shared 50/50.
- (b) The Parties currently intend, but are not obligated, to structure the financing for equipment purchases by Flash Forward necessary to effect the ramp-up as follows:
- (i) Flash Forward will enter into equipment lease or loan agreements and pledge the financed equipment as collateral;
 - (ii) Flash Forward will secure external financing for approximately [***] of the initial purchase price of its tools and each Party will provide equity capital contributions and loans (on a subordinated basis) for the remaining cash requirements of Flash Forward necessary to effect the ramp-up;
 - (iii) each Party will severally and not jointly and through separate arrangements guarantee as close as possible to fifty percent (50%) of Flash Forward's obligations under such lease or loan agreements (any financing separately guaranteed or provided by Toshiba for Flash Forward or otherwise for investment in the Y5 Facility, "Toshiba Financing", any such financing separately guaranteed or provided by SanDisk for Flash Forward or otherwise for investment in the Y5 Facility "SanDisk Financing" and the Toshiba Financing and SanDisk Financing, each a "Financing"); and
 - (iv) the Parties will attempt to obtain the foregoing financing from the same financial institution, but under separate agreements that expressly disclaim any joint and several liability of the Parties.
- (c) With respect to any Toshiba Financing or SanDisk Financing, the following shall apply:
- (i) The terms and conditions of any Toshiba Financing shall be subject to the prior written approval of SanDisk and the terms of any SanDisk Financing shall be subject to the prior written approval of Toshiba, in each case after review of final drafts of all documents evidencing such Financings. The foregoing approval of either Party shall (A) not be unreasonably withheld, delayed or conditioned by such Party, and (B) not subject such approving Party to any liability or obligations with respect to such financing.
 - (ii) Unless otherwise expressly agreed by both Parties in writing in each case, all Toshiba Financing and all SanDisk Financing shall create only several obligations of the Parties and no joint and several obligations or liability. Toshiba (with respect to Toshiba Financing) and SanDisk (with respect to SanDisk Financing) hereby indemnifies and holds harmless the other Party and its Indemnified Parties from any claims by any financial institution or other Person that the other Party has any liabilities or obligations with respect to, respectively, any Toshiba Financing or SanDisk Financing (unless joint

liability has been agreed pursuant to the first sentence of this Section 6.12(c)(ii).

- (iii) Flash Forward will use commercially reasonable efforts to comply with the requirements of any financing sources. Flash Forward will make available to each Party one-half of its assets (with as near as practicable cost, collateral value and type) to secure such Party's Financing (whether external or loans from a Party or its Affiliates).
- (d) If the lender under the Financing for either Party (as the "Defaulting Party") takes significant actions to enforce its right in the collateral, then the other Party (as the "Non-Defaulting Party") shall have the right, but not the obligation, to cure the default giving rise to the lender's enforcement action. If the Non-Defaulting Party exercises such cure right, then the Non-Defaulting Party's rights in any subject collateral shall be superior to the Defaulting Party's and the Non-Defaulting Party may exercise one of the following options:
- (i) the Non-Defaulting Party (A) shall have a claim against the Defaulting Party for reimbursement of any payments made by the Non-Defaulting Party on the Defaulting Party's behalf (which will be subordinate to the lender's claims and bear interest at a rate 500 basis points in excess of the rate being charged by the lender to the Defaulting Party) and (B) shall have the right, until and unless the Defaulting Party pays in full the obligation to the Non-Defaulting Party under foregoing clause (A), to take over the increment of production of the Y5 Facility represented by the collateral with respect to which the lender took significant actions to enforce its rights; or
 - (ii) the Non-Defaulting Party shall have the right to terminate the Operating Agreement pursuant to Section 11.6 thereof (foreclosure default).
- 6.13 Other Activities. Except as expressed in this Section 6 and in the JMDY Agreement and the JVRA, neither Party nor any of their respective Affiliates shall: (a) fabricate NAND Flash Memory Integrated Circuits or R/W at any location other than the Yokkaichi Facility or any other fabrication facility agreed upon by the Parties in writing; (b) have any third party fabricate NAND Flash Memory Integrated Circuits or R/W; or (c) have any right to fabricate NAND Flash Memory Integrated Circuits or R/W beyond the capacity as limited pursuant to this Section 6. For the avoidance of doubt, nothing contained in the foregoing shall restrict the Parties from engaging in any other activities, including, without limitation, (i) designing any NAND Flash Memory Product or R/W; (ii) selling any NAND Flash Memory Product or R/W to any customer; (iii) entering into any equipment purchase or material supply agreements; or (iv) entering into any patent licensing arrangement. For purposes of this Section 6.13, "NAND Flash Memory Integrated Circuits" means ICs included in the definition of NAND Flash Memory Products pursuant to Section 3.2.
- 6.14 Protection of Intellectual Property. Both Parties recognize that it is important for the success of the Y5 NAND Flash Memory Products business to promote the adoption of such Y5 NAND Flash Memory Products with a wide variety of customers and applications, whether for card use or non-card use, and with such recognition, each Party shall use reasonable efforts to protect and enhance the value of Y5 NAND Flash Memory Products.
- 7. Start-Up and Production Costs**
- 7.1 Start-Up Services for Y5. The Parties acknowledge that either or both of the Parties and Flash Forward have incurred or will incur costs in connection with developing Flash Forward and the Y5 Facility and preparing the Y5 Facility for production, including personnel costs, materials costs and other operating expenses, for which

each Party has the obligation ultimately to bear fifty percent (50%) of the responsibility (“Start-Up Costs”). The Parties shall discuss in good faith and agree upon the Start-Up Costs borne by either Party and the means and timing of each Party, as applicable, being reimbursed or credited for having incurred more than fifty percent (50%) of the Start-Up Costs or of making payments due to having incurred less than fifty percent (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 Y4 Facility.

- 7.2 Equal Participation and Purchase Price Per Unit Generally. The Parties intend to meet demand for increased capacity by equally investing in, and jointly building, and sharing, on equal or substantially equal terms, equal amounts of new capacity for Y5 NAND Flash Memory Products, except as otherwise provided herein. So long as each Party’s Threshold NAND Capacity Ratio (as defined below) is greater than or equal to [***], each Party will pay [***] of the same product and same design rule.
- 7.3 Adjustment Payment. If either Party’s Threshold NAND Capacity Ratio falls below [***].
- 7.4 Cost Terms.
- (a) Fixed and Variable Manufacturing Costs. All costs of manufacturing shall be either Fixed Manufacturing Costs (as defined below) or Variable Manufacturing Costs (as defined below).
- (i) [***].
- (ii) [***].
- (b) Threshold NAND Capacity Ratio. The term “Threshold NAND Capacity Ratio” shall mean the applicable Party’s NAND lot per month capacity [***] in the Y5 Facility, as calculated on an Equivalent Lot (as defined below) basis divided by [***], provided, however, that [***].
- (c) Y5 Capacity Ratio. The term “Y5 Capacity Ratio” for either SanDisk or Toshiba shall mean [***].
- (d) Y5 NAND Capacity Ratio. The term “Y5 NAND Capacity Ratio” for either SanDisk or Toshiba shall mean [***].
- (e) Equivalent Lot. [***].
- 7.5 Negative Impacts. In the event of any negative impact on the cost or output efficiency of JV Y5 NAND Flash Memory Products or Flash Forward R/W due to Non-NAND Product production in one Party’s Non-JV Space, [***].
- 7.6 Cost and Methodology. In all events, Y5 manufacturing cost and wafer cost methodology will be in accordance with Toshiba’s past practice and accounting system.

8. Other Agreements

To supplement their agreement as expressed in certain of the Master Operative Documents, the Parties agree as set forth in this Section 8. To the extent of any conflict between this Section 8 and any other Master Operative Document referenced in this Section 8, the other Master Operative Document shall prevail.

8.1 Flash Forward Management.

- (a) As contemplated by the FF Operating Agreement, the Y5 Operating Committee's purpose is to give both Parties the ability to influence the day to day operating decisions of Flash Forward and the Y5 Facility. The Y5 Operating Committee is intended to be a collaborative body with real-time communications, respectful consultation and dispute resolution with the goal of making the Y5 Facility the most competitive (cost and technology) memory fabrication facility in the world.
- (b) If the Y5 Operating Committee is unable to decide an issue (by agreement of its two members) such issue shall be referred to the Board of Executive Officers. Special meetings of the Board of Executive Officers may be noticed for issues requiring urgent resolution. The Parties contemplate that while a special meeting of the Board of Executive Officers is being noticed, their respective management teams will discuss any issue that the Y5 Operating Committee could not resolve.
- (c) If the Board of Executive Officers is unable to decide an issue (by unanimous agreement), such issue shall be referred to the Management Representatives for resolution, which shall be vested with final decision making authority. This Agreement separately provides for procedures if the Management Representatives is unable to reach agreement on such issue.

8.2 Y5 Facility.

- (a) Site Preparation, Building Construction and Facilitization.
 - (i) Toshiba will design, construct and facilitate the Y5 Facility. SanDisk shall work with Toshiba to help minimize administrative approval delays. Toshiba shall exercise all commercially reasonable efforts to ensure that Y5 Facility is (A) insurable, (B) designed and constructed to mutually acceptable high levels of risk standards, and (C) is completed [***]; *provided*, that Toshiba shall have no liability to SanDisk, any Affiliate of SanDisk or Flash Forward if completion is not achieved by such time. The depreciation for the Y5 Facility will be charged in accordance with Section 8.3(d).
 - (ii) With prior coordination with Toshiba and the construction contractors for the Y5 Facility, SanDisk will have reasonable access to the construction site for the Y5 Facility and to all information pertaining to the construction of the Y5 Facility, on condition that SanDisk will be solely responsible for all damage caused by such access.
 - (iii) Building Depreciation Prepayment and Shortened Depreciation Schedule for [***]:
 - (A) Each of the Parties agrees to [***], in a manner to be mutually agreed.
 - (B) If [***], the Parties agree to [***].
 - (iv) Also for purposes of this Section 8.2, Toshiba's cost of site/land preparation for the Y5 Facility [***].
- (b) Land. With respect to the land purchased by Toshiba related to the establishment of the Y5 Facility, SanDisk will pay to Toshiba on a quarterly basis during the term of this Agreement compensation for [***] for the actual aggregate purchase price of such land [***]. For purposes of this Section 8.2, [***]. Annual depreciation of the Y5 Facility shall be calculated in accordance with Section 8.3(d). To the extent appropriate, these charges will be invoiced under the FF Foundry Agreement, as

provided at Section 8.3 below. For any portion of the Y5 Capacity Ratio that is not subject to the FF Foundry Agreement, such charges shall be invoiced directly.

- (c) Incentives. Government incentives (financial or otherwise) attributable to the assets or operations of Flash Forward and the Y5 Facility will be shared by the Parties in accordance with the Y5 Capacity Ratio at the time such incentives are realized. The Parties will discuss such incentives and the sharing thereof based on the type of incentives.
- 8.3 FF Foundry Agreement. Flash Forward and Toshiba shall enter into the FF Foundry Agreement at the Closing. In the event SanDisk owns or leases manufacturing equipment located in the Y5 Facility as a result of [***], SanDisk and Toshiba will enter into a foundry agreement with terms substantially similar to the FF Foundry Agreement. The FF Foundry Agreement provides for ordering procedures, prices, delivery, cost reporting and other specific terms and conditions for the manufacture by Toshiba and supply to Flash Forward of Y5 NAND Flash Memory Products, which shall be consistent with the following basic terms:
- (a) Facilities, Equipment and Raw Materials. The manufacturing facilities will be located at the Y5 Facility and die sort will be located [***] or such other place as the Parties may agree upon. Flash Forward and Toshiba will enter into an exclusive lease agreement with respect to the Y5 Facility and Flash Forward's manufacturing equipment located in the Y5 Facility to be used in the manufacture of Y5 NAND Flash Memory Products by Toshiba. Toshiba shall be responsible for obtaining the raw materials and services to be used in the manufacture of Y5 NAND Flash Memory Products. Raw materials shall be procured in accordance with that certain RMPA.
- (b) Production. Toshiba will manufacture Y5 NAND Flash Memory Products at the Y5 Facility for Flash Forward ordered by Toshiba and SanDisk under the terms and conditions of the FF Purchase and Supply Agreements. Flash Forward and Toshiba (from the Yokkaichi Facility) will use their best efforts to achieve the Business Plan manufacturing capacity. Wafers produced in the JV Space will be sorted between the Parties such that aggregate yield losses will be shared on an equal basis.
- (c) Operating Relationship. The Parties shall provide personnel necessary for the manufacturing of the Y5 NAND Flash Memory Products as described in Section 6.10.
- (d) Consideration to be Paid to Toshiba. Toshiba will be compensated by Flash Forward as provided in the FF Foundry Agreement [***].
- (e) No Duplication of Costs or Expenses. It is the intent of the Parties that any payments made by SanDisk under or pursuant to any Master Operative Documents, FA Operative Documents, FP Operative Documents or Joint Operative Documents shall not be duplicative and SanDisk shall in no event be required to pay or contribute more than once for any service, product or development work provided under such agreements, if such service, product or development work is provided under more than one agreement. In addition, if SanDisk makes a direct payment for any service, product or development work provided under any such agreement, the cost incurred by Toshiba (from the Yokkaichi Facility), Flash Alliance, Flash Partners or Flash Forward, 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 SanDisk.
- (f) Exclusivity. The Yokkaichi Facility shall be Flash Forward's exclusive manufacturing source for output of Y5 NAND Flash Memory Products. Flash Forward may seek external manufacturing sources for output in excess of the Yokkaichi Facility's capacity upon agreement by the Management Representatives.

- 8.4 FF Purchase and Supply Agreements. Flash Forward and each of the Parties or their respective Affiliates will enter into substantially identical FF Purchase and Supply Agreements providing for specific terms and conditions for the purchase by the Parties of Y5 NAND Flash Memory Products from Flash Forward, which shall be consistent with the following basic terms:
- (a) Manufacturing. Flash Forward shall manufacture or cause to be manufactured Y5 NAND Flash Memory Products and, as applicable, Y5 R/W as contemplated by Section 8.3.
 - (b) Purchase Commitment. Except as contemplated in Section 6.3, each Party shall (itself or through Affiliates) purchase one half (based on a measure of Equivalent Lots out per week) of the total L/M of JV Y5 NAND Flash Memory Products. The foregoing purchase commitment of each Party shall not be subject to reduction except as provided in Section 6.6(b).
 - (c) Sales Price for JV Y5 NAND Flash Memory Products Purchased by the Parties. The sales price charged by Flash Forward to the Parties for wafers manufactured at Y5 shall be the sum of:
 - (i) [***]
 - (ii) [***].
 - (d) Other Cost Items. Other items related to the manufacture of Y5 NAND Flash Memory Products will be charged on a monthly basis from Flash Forward to the Parties and will include the following:
 - (i) [***];
 - (ii) [***];
 - (iii) [***];
 - (iv) [***];
 - (v) [***]; and
 - (vi) [***].
- 8.5 Documentation of JV R/W Production. In the event that R/W comes to be produced in the Y5 Facility, the Parties shall negotiate in good faith with respect to adopting modified documentation concerning such production, including, in the event of production in the JV R/W Space, (a) a foundry agreement indicating ordering procedures, prices, delivery, cost reporting and other specific terms and conditions for the manufacture by Toshiba and supply to Flash Forward of R/W, and (b) agreements governing the Parties' respective purchases of R/W from Flash Forward, taking into account the differences between the production process of R/W and that of NAND Flash Memory Products, among other factors.
- 8.6 Other Matters.
- (a) Forecasts/Production Planning. Each Party will submit forecasts, [***] as further provided in the FF Purchase and Supply Agreements. The Parties shall use the system at the Yokkaichi Facility for such direct forecast submission, provided that the cost necessary for [***] shall be borne by SanDisk. Each Party shall be provided the same access to Y5 data relating to Flash Forward data and such Party's non-JV data, including data used for output forecasts, as the Parties receive with respect to Y4 data

relating to Flash Alliance. Flash Forward production planning will hold a monthly production planning meeting with representatives of each Party, as further provided in the FF Purchase and Supply Agreements. At such meetings, the Parties will agree on a production plan for the [***] which plan will be final (and the related forecast will be deemed to be covered by a binding purchase order).

- (b) Production Control. Flash Forward will provide each Party [***] on a non-discriminatory basis [***] with respect to [***] provided that the cost necessary for making such system available to SanDisk will be borne by SanDisk. Each Party shall be provided the same access to Y5 data relating to Flash Forward data and such Party's non-JV data, including data used for tool/process analysis, as the Parties receive with respect to Y4 data relating to Flash Alliance. Each Party (through the Y5 Management Representatives) will have the right to discuss the production schedule, planned wafer starts and [***].
- (c) Operating Reports. SanDisk will have full access to any management or operation reports related to Flash Forward or Flash Forward's business through the Y5 Operating Committee (as defined in the FF Operating Agreement). Management and operating reports related to Flash Forward or Flash Forward's business as mutually agreed from time to time will be simultaneously made available in Japanese and English to each Party. Upon request, Toshiba employees will explain such reports to SanDisk's employees and respond to questions from SanDisk's employees, but Toshiba will not be responsible for SanDisk's failure to understand such reports.
- (d) Insurance. Toshiba shall maintain or arrange property insurance covering assets owned or leased by Flash Forward, and business interruption insurance in respect of the business of Flash Forward, the scope and amounts of which shall be consistent with Toshiba's practices at the Yokkaichi Facility and as required by any lender. This coverage shall provide basically full replacement value of all Flash Forward owned and leased equipment, subject to valuation as part of Toshiba's annual insurance policy renewal, and shall name Flash Forward as a beneficiary in respect of assets owned or leased by it and Flash Forward's employee expenses covered by business interruption insurance. On an annual basis, or when requested by either Party, the Y5 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 Flash Forward's assets or business. Further, SanDisk reserves the right to seek to arrange additional property or business interruption insurance for its own account in respect of Flash Forward's assets or business, and shall be responsible for the maintenance of insurance with respect to equipment used in the SanDisk R/W Space and any SanDisk Unilateral Expansion Space, and Toshiba shall cooperate in good faith to provide such information and access as is reasonably necessary for SanDisk to arrange such insurance. If Toshiba makes a recovery from a third party (other than an insurer per the above) in respect of both assets of Flash Forward and other assets, then Toshiba shall allocate to Flash Forward a share of the net amount of such recovery in proportion to the losses suffered by Flash Forward and total losses suffered by Flash Forward and Toshiba.

9. Termination

9.1 Termination.

- (a) Termination of any Master Operative Document by either Party shall be done only in good faith.
- (b) This Agreement shall be terminated automatically upon the earlier of the Transfer of all of a Party's FF Interests to the other Party (or its Affiliate) or upon completion of the dissolution and liquidation of Flash Forward pursuant to Section 11 (Dissolution)

of the FF Operating Agreement (the date of such Transfer or dissolution and liquidation, the “FF Termination Date”).

- (c) Upon termination of this Agreement resulting from an event of dissolution of Flash Forward due to the expiration of Flash Forward pursuant to Section 11.1(a) (Expiration) of the FF Operating Agreement:
- (i) the Parties shall further amend the Cross License Agreement, as then in effect, to specify that each Party’s patents issued or issuing on patent applications entitled to an effective filing date prior to the FF Termination Date are licensed on a royalty-free basis for the duration of such patents. The scope of the licenses as amended pursuant to this Section 9.1(c)(i) shall not be greater than the scope of those granted under the Cross License Agreement, as in effect as of the FF Termination Date.
 - (ii) Toshiba shall grant to SanDisk, effective upon the FF Termination Date, a non-exclusive, non-transferable (except to Affiliates of SanDisk), non-sub-licensable, fully paid up, royalty-free license to make, have made, use, sell and have sold NAND Flash Memory Products anywhere in the world utilizing the NAND technology transferred to and/or utilized at the Yokkaichi Facility, and SanDisk shall have full access to all such know-how at the Yokkaichi Facility which has been transferred to the Yokkaichi Facility prior to the FF Termination Date.
- (d) Upon a termination of this Agreement resulting from (i) an event of dissolution of Flash Forward or (ii) one Party’s acquisition of all of the other Party’s FF Interests (the acquirer thereof referred to hereinafter as the “Acquiring Party” and the seller thereof referred to hereinafter as the “Selling Party”) pursuant to Section 11.5 (Dissolution Upon Notice) of the FF Operating Agreement:
- (i) Toshiba or the Acquiring Party, as the case may be, will, upon the request, prior to the FF Termination Date, of (A) SanDisk (such request to be made at the time of its notice pursuant to Section 11.5 of the FF Operating Agreement) in the case of the dissolution of Flash Forward or (B) the Selling Party (each, a “Requesting Party”) as the case may be, continue to manufacture NAND Flash Memory Products for the Requesting Party (not to exceed the Requesting Party’s capacity allocation available from Flash Forward under this Agreement as of the FF Termination Date (the “Termination Capacity.”)) for a period of [***] following the Termination Date in the following ramp-down manner:
 - (A) [***]
 - (B) [***]
 - (C) [***]
 - (ii) Toshiba and SanDisk and their respective Affiliates shall have a perpetual, fully paid-up, royalty-free right to use technology previously transferred to one another during the term of this Agreement.
 - (iii) The Parties shall further amend the Cross License Agreement to specify that each Party’s patents issued or issuing on patent applications entitled to an effective filing date prior to the FF Termination Date are licensed on a royalty free basis for the duration of such patents. The scope of the licenses as amended pursuant to this Section 9.1(d)(iii) shall not be greater than the scope of those granted under the Cross License Agreement, as in effect as of FF Termination Date.

- (iv) Upon termination of this Agreement resulting from an event of dissolution of Flash Forward caused by Toshiba's election to withdraw from Flash Forward pursuant to the FF Operating Agreement, Toshiba hereby grants to SanDisk, effective upon the FF Termination Date, a non-exclusive, non-transferable (except to Affiliates of SanDisk), non-sub-licensable, fully paid-up, royalty-free license to make, have made, use, sell and have sold NAND Flash Memory Products anywhere in the world utilizing the NAND technology transferred to and/or utilized at the Yokkaichi Facility, and SanDisk shall have full access to all such know-how at the Yokkaichi Facility which has been transferred to the Yokkaichi Facility prior to the FF Termination Date.
- (e) [Intentionally omitted.]
- (f) Upon termination of this Agreement resulting from an event of dissolution of Flash Forward or one Party's acquisition of the other Party's FF Interests following a Deadlock (as defined in the FF Operating Agreement) pursuant to Section 10.3 (Dispute Resolution; Deadlock) of the FF Operating Agreement:
- (i) In the case of one Party's acquisition of the other Party's FF Interests pursuant to Section 10.3(e) of the FF Operating Agreement, the Acquiring Party shall continue to manufacture products for the other Party (not to exceed the other Party's Termination Capacity) for a period of [***] following the FF Termination Date in accordance with the following ramp down manner:
- (A) [***]
- (B) [***]
- (C) [***]
- (ii) The Parties and their respective Affiliates shall have a perpetual, fully paid-up, royalty-free right to use technology previously transferred to one another during the term of this Agreement.
- (iii) The Parties shall further amend the Cross License Agreement to specify that, with respect only to Y5 NAND Flash Memory Products and any other Licensed Products defined in the Cross License Agreement and manufactured with 300mm wafers at any facility, each Party's patents issued or issuing on patent applications entitled to an effective filing date prior to the FF Termination Date are licensed: (x) at the royalty rates specified in Schedule 9.1(f) until March 31, 2018; and (y) thereafter, on a royalty-free basis. Both Parties shall negotiate in good faith for up to [***] upon request of either Party at any time during the [***] after the FF Termination Date to agree on royalty rates for patents filed by each Party after the FF Termination Date. The scope of the licenses as amended pursuant to this Section shall not be greater than the scope of those granted under the Cross License Agreement, as in effect as of the FF Termination Date.
- (g) Upon termination of this Agreement resulting from an event of dissolution of Flash Forward or a Party's acquisition of the other Party's FF Interests described in Section 11.3 (Dissolution Upon Event of Default) of the FF Operating Agreement:
- (i) The Parties shall further amend the Cross License Agreement to specify that, with respect only to Y5 NAND Flash Memory Products and any other Licensed Products defined in the Cross License Agreement and manufactured with 300mm wafers at any facility, each Party's patents issued or issuing on patent applications entitled to an effective filing date prior to the FF Termination Date are licensed at the royalty rates specified in Schedule 9.1(g).

for [***] after the FF Termination Date or until the end of [***], whichever comes first, and thereafter such licenses shall be [***].

- (ii) In the event that Toshiba or an Affiliate of Toshiba is the Defaulting Party, Toshiba shall grant to SanDisk, effective upon such date of termination, a non-exclusive, non-transferable (except to Affiliates of SanDisk), non-sub-licensable, fully paid-up, royalty-free license to make, have made, use, sell and have sold NAND Flash Memory Products anywhere in the world utilizing the NAND technology transferred to and/or utilized at the Yokkaichi Facility, and SanDisk shall have full access to all such know-how at the Yokkaichi Facility which has been transferred to the Yokkaichi Facility prior to the FF Termination Date.
- (h) Upon termination of this Agreement resulting from an event of dissolution described in Section 11.1(f) (Bankruptcy Event) of the FF Operating Agreement:
- (i) If such termination is caused by a Bankruptcy Event in respect of Toshiba, (x) the license granted to SanDisk under Toshiba Licensed Patents pursuant to the Cross License Agreement shall continue on a royalty-free basis, and (y) Toshiba shall grant to SanDisk, effective upon such date of termination, a non-exclusive, non-transferable (except to Affiliates of SanDisk), non-sub-licensable, fully paid-up, royalty-free license to make, have made, use, sell and have sold NAND Flash Memory Products anywhere in the world utilizing the NAND technology transferred to and/or utilized at the Yokkaichi Facility, and SanDisk shall have full access to all such know-how at the Yokkaichi Facility which has been transferred to the Yokkaichi Facility prior to the Termination Date.
 - (ii) If such termination is caused by a Bankruptcy Event in respect of SanDisk, the license granted to Toshiba under SanDisk Licensed Patents (as defined in the Cross License Agreement) pursuant to the Cross License Amendment shall continue on a royalty-free basis.
- (i) Upon a termination of this Agreement resulting from a purchase and sale transaction described in Section 11.6 (Financing Default) of the FF Operating Agreement, there shall be no capacity ramp-down rights or obligations and:
- (i) If such termination is caused by a financing default in respect of Toshiba, (x) the Parties shall further amend the Cross License Agreement to specify that, with respect only to Y5 NAND Flash Memory Products and any other Licensed Products defined in the Cross License Agreement and manufactured with 300mm wafers at any facility, Toshiba's patents issued or issuing on patent applications entitled to an effective filing date prior to the FF Termination Date are licensed to SanDisk on a royalty-free basis, and (y) Toshiba shall grant to SanDisk, effective upon such date of termination, a non-exclusive, non-transferable (except to Affiliates of SanDisk), non-sub-licensable, fully paid-up, royalty-free license to make, have made, use, sell and have sold NAND Flash Memory Products anywhere in the world utilizing the NAND technology transferred to and/or utilized at the Yokkaichi Facility, and SanDisk shall have full access to all such know-how at the Yokkaichi Facility which has been transferred to the Yokkaichi Facility prior to the Termination Date.
 - (ii) If such termination is caused by a financing default in respect of SanDisk, the Parties shall further amend the Cross License Agreement to specify that, with respect only to Y5 NAND Flash Memory Products and any other Licensed Products defined in the Cross License Agreement and manufactured with 300mm wafers at any facility, SanDisk's patents issued or issuing on patent

applications entitled to an effective filing date prior to the FF Termination Date are licensed to Toshiba on a royalty-free basis.

(j) Restructuring Costs.

- (i) In the event this Agreement is terminated, the Parties will exercise best efforts to plan such termination in advance with the goal of minimizing related costs. With respect to Toshiba employees and SanDisk employees working at the Y5 Facility, (A) in the case of those that are Toshiba employees, Toshiba will use its best efforts to retrain or relocate such individuals to other Toshiba facilities, and (B) in the case of those that are SanDisk employees, SanDisk will use its best efforts to retrain or relocate such individuals to other SanDisk facilities, each to the maximum extent possible.
- (ii) The Parties agree that in the event of such a SanDisk exit from Flash Forward, [***].
 - (A) [***]
 - (B) [***]
- (iii) Upon any termination of this Agreement, the Parties shall meet and discuss in good faith an estimate of the Restructuring Costs anticipated to be incurred by Toshiba. [***].

(k) Unless otherwise expressly provided herein, termination of this Agreement shall not affect any surviving rights or obligations of either Party set forth in the Joint Operative Documents.

10. Miscellaneous

- 10.1 Survival. Sections 1.3, 6.10(b)(vii), 6.11, 6.12(d), 9 and 10 and Appendix A shall survive the termination or expiration of this Agreement.
- 10.2 Entire Agreement. This Agreement, together with the exhibits, schedules, appendices and attachments thereto, constitutes the 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.
- 10.3 Governing Law. This Agreement shall in all respects 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. Each Master Operative Document 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 10.3.
- 10.4 Assignment. Except as separately agreed by the Parties in writing, neither Party 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 shall not require any consent of the other party) without the prior written consent of the other Party (which consent may be withheld in such other Party's sole discretion), and any such purported transfer without such consent shall be void.
- 10.5 [***]. Notwithstanding the provisions of Section 2.9 of Appendix A, any other provision of this Agreement, and any delay beyond the date of hereof of execution by SanDisk Flash of this Agreement, Toshiba and SanDisk acknowledge and agree that, by the execution and delivery hereof to Toshiba and SanDisk Corporation: (a) this

Agreement shall be effective as between Toshiba and SanDisk Corporation as of the date hereof; and (b) upon the execution and delivery to Toshiba and SanDisk Corporation of this Agreement by SanDisk Flash, SanDisk Flash shall be joined as a Party to this Agreement, this Agreement shall be effective by and among Toshiba, SanDisk Corporation and SanDisk Flash as of the date written by the signature of the authorized signatory of SanDisk Flash, and SanDisk Flash shall enjoy and be subject to all rights and obligations hereunder from and after such date.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, this Agreement has been executed and delivered by the Parties as of the date first above written.

TOSHIBA CORPORATION

By: /s/ Kiyoshi Kobayashi

Name: Kiyoshi Kobayashi

Title: President and CEO
Semiconductor Company
Corporate Senior Vice President

SANDISK CORPORATION

By: /s/ Eli Harari

Name: Eli Harari

Title: Chairman and CEO

SANDISK FLASH B.V.

By: /s/ Sanjay Mehrotra

Name: Sanjay Mehrotra

Title: Director

[Signature Page to Flash Forward Master Agreement]

APPENDICES

Appendix A - Definitions, Rules of Construction and General Terms and Conditions

EXHIBITS

(FF Operative Documents)

- Exhibit A1 - Capital Interests Purchase Agreement
- Exhibit A2 - FF Operating Agreement
- Exhibit A3 - FF Patent Indemnification Agreement
- Exhibit A4 - Environmental Indemnification Agreement
- Exhibit A5 - Lease Agreement
- Exhibit A6 - Toshiba-SanDisk Flash Services Agreement
- Exhibit A7 - Toshiba-Flash Forward Services Agreement
- Exhibit A8 - SanDisk Flash-Flash Forward Services Agreement

(Joint Operative Documents)

- Exhibit B - Amendment No. 5 to Cross License Agreement

SCHEDULES

- Schedule 4.5 - Litigation; Decrees
- Schedule 4.7 - Patents and Proprietary Rights
- Schedule 4.9 - Cross License Payment Obligations
- Schedule 6.2(a) - Technology Transfer Costs
- Schedule 7.4(a) - Fixed Manufacturing Costs and Variable Manufacturing Costs
- Schedule 9.1(f) - Royalty in case of Deadlock Termination
- Schedule 9.1(g) - Royalty in case of Event of Default Termination

APPENDIX A

DEFINITIONS, RULES OF CONSTRUCTION AND DOCUMENTARY CONVENTIONS

The following shall apply unless otherwise required by the main body of the agreement into which this Appendix A is being incorporated (as used herein, "this Agreement"):

Definitions

The following terms shall have the specified meanings:

"3D Collaboration Agreement", means the 3D Collaboration Agreement, dated as of June 13, 2008, between SanDisk Corporation and Toshiba.

"Accountants" means such firm of internationally recognized independent certified public accountants for Flash Forward as is appointed pursuant to the FF Operating Agreement from time to time. Initially, the Accountants shall be Shin Nihon & Company, an affiliate of Ernst & Young LLP.

"Affiliate" of any Person means any other Person which directly or indirectly controls, is controlled by or is under common control with, such Person; *provided, however*, that the term Affiliate, (a) when used in relation to Flash Forward or any Subsidiary of Flash Forward, shall not include SanDisk Corporation or Toshiba or any Affiliate of either of them, and (b) when used in relation to SanDisk Corporation or Toshiba or any Affiliate of either of them, shall not include Flash Forward or any Subsidiary of Flash Forward.

"Articles" means the Articles of Incorporation of Flash Forward.

"Asahi Area" means Toshiba's facilities in Asahi, Japan.

"Bankruptcy Event" means, with respect to any Person, the occurrence or existence of any of the following events or conditions: such Person (1) is dissolved; (2) becomes insolvent or fails or is unable or admits in writing its inability generally to pay its debts as they become due; (3) makes a general assignment, arrangement or composition with or for the benefit of its creditors; (4) institutes or has instituted against it a proceeding seeking a judgment of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency law or other similar law affecting creditors' rights, or a petition is presented for its winding up or liquidation and, in the case of any such proceeding or petition instituted or presented against it, such proceeding or petition (A) results in a judgment of insolvency or bankruptcy or the entry of an order for relief or the making of an order for its winding up or liquidation or (B) is not dismissed, discharged, stayed or restrained in each case within 60 days of the institution or presentation thereof; (5) has a resolution passed by its governing body for its winding-up or liquidation; (6) seeks or becomes subject to the appointment of an administrator, receiver, trustee, custodian or other similar official for it or for all or substantially all its assets (regardless of how brief such appointment may be, or whether any obligations are promptly assumed by another entity or whether any other event described in this clause (6) has occurred and is continuing); (7) experiences any event which, under the applicable laws of any jurisdiction, has an analogous effect to any of the events specified in clauses (1) through (6) above; or (8) takes any action in furtherance of, or indicating its consent to, approval of, or acquiescence in, any of the foregoing acts.

"Board of Executive Officers" has the meaning set forth in Section 5.1(a) of the FF Operating Agreement.

“Burdensome Condition” means, with respect to any proposed transaction, any action taken, or credibly threatened, by any Governmental Authority or (except if such action or threat is frivolous) other Person to challenge the legality of such proposed transaction, including (i) the pendency of a governmental investigation (formal or informal) in contemplation of the possible actions described in clauses (ii)(A), (ii)(B) or (ii)(C) below, (ii) the institution of a suit or the written threat thereof (A) seeking to restrain, enjoin or prohibit the consummation of such transaction or material part thereof, to place any material condition or limitation upon such consummation or to invalidate, suspend or require modification of any material provision of any Operative Document, (B) challenging the acquisition by either Toshiba or SanDisk Flash of its Interests or (C) seeking to impose limitations on the ability of either Toshiba or SanDisk Flash effectively to exercise full rights as Members of Flash Forward, including the right to act on all matters properly presented to the parties pursuant to the FF Operating Agreement, or (iii) an order by a court of competent jurisdiction having any of the consequences described in (ii)(A), (ii)(B) or (ii)(C) above, or placing any conditions or limitations upon such consummation that are unreasonably burdensome in the reasonable judgment of the applicable Person.

“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.

“Business Plan” means the Initial Business Plan and each subsequent business plan, including budgets and projections for Flash Forward for each relevant period, approved in accordance with Section 3.4(c) of the FF Operating Agreement and complying with Section 3.4(b) of the FF Operating Agreement.

“Capital Contribution” means the capital contribution made by or allocated to a Party by virtue of its ownership of Interests as indicated on Schedule 6.1 to the FF Operating Agreement.

“Change of Control” with respect to a Person means a transaction or series of related transactions as a result of which (i) more than 50% of the beneficial ownership of the outstanding common stock or other ownership interests of such Person (representing the right to vote for the board of directors or similar organization of such Person) is acquired by another Person or affiliated group of Persons, whether by reason of stock acquisition, merger, consolidation, reorganization or otherwise or (ii) the sale or disposition of all or substantially all of a Person’s assets to another Person or affiliated group of Persons.

“Closing” means the closing of the transactions described in Sections 2.1 of the Master Agreement.

“Closing Date” means the date of the Closing.

“Code” means the Internal Revenue Code of 1986, as amended from time to time, or any successor statute. Any reference to a particular provision of the Code or a treasury regulation promulgated pursuant to the Code means, where appropriate, the corresponding provision of any successor statute or regulation.

“Common R&D Agreement” means the Fourth Amended and Restated Common R&D and Participation Agreement, dated as of the Effective Date, between Toshiba and SanDisk Corporation.

“Companies Act” means the Companies Act (*Kaisha-ho*), Law No. 86 of July 26, 2005, as may be amended hereafter and in effect as at any time.

“Control” (including its correlative meanings “controlled by” and “under common control with”) means possession, directly or indirectly, of power to direct or cause the

direction of management or policies (whether through ownership of securities or partnership or other ownership interests, by contract or otherwise).

“Cross License Agreement” has the meaning given in the Master Agreement.

“Effective Date” means July 13, 2010.

“Environmental Indemnification Agreement” means the Flash Forward Mutual Contribution and Environmental Indemnification Agreement, dated as of July 13, 2010, between Toshiba and SanDisk Flash.

“Event of Default” means, with respect to a Party, the occurrence or existence of any of the following events or conditions which remains uncured for sixty (60) days following receipt by such Party of written notice thereof:

(a) a Bankruptcy Event in respect of such Party or any Person of which such Party is a Subsidiary; or

(b) the breach by such Party of its covenant in Section 9.1 of the FF Operating Agreement or the breach by such Party of its covenant in Section 5.1(b) of the Master Agreement, *provided* that a Change of Control of a Party shall not be deemed an Event of Default.

“FA Master Agreement” means the Master Agreement among Toshiba, SanDisk and SanDisk Ireland dated as of July 7, 2006.

“FA Operative Documents” means the Flash Alliance Master Agreement, dated as of July 7, 2006, the Share Purchase Agreement between Toshiba and SanDisk Ireland, dated as of July 7, 2006, the Operating Agreement between Toshiba and SanDisk Ireland, dated as of July 7, 2006, the Articles of Incorporation of Flash Alliance, the Foundry Agreement between Flash Alliance and Toshiba, dated as of July 7, 2006, the Purchase and Supply Agreement between Flash Alliance and [***], dated as of July 7, 2006, the Purchase and Supply Agreement between Flash Alliance and Toshiba, dated as of July 7, 2006, the Patent Indemnification Agreement among SanDisk Corporation, [***] and Toshiba, dated as of July 7, 2006, the Mutual Contribution and Environmental Indemnification Agreement between SanDisk Ireland and Toshiba, dated as of July 7, 2006, the Lease Agreement between Flash Alliance and Toshiba, as owner of the Yokkaichi Facility, dated as of July 7, 2006, the Services Agreement between SanDisk Ireland and Toshiba, dated as of July 7, 2006, the Services Agreement between Flash Alliance and Toshiba, as owner of the Yokkaichi Facility, dated as of July 7, 2006, and the Services Agreement between Flash Alliance and SanDisk Ireland, dated as of July 7, 2006, in each case as amended by the JVRA.

“FF Foundry Agreement” means the Foundry Agreement, dated as of the Effective Date, between Flash Forward and Yokkaichi.

“FF Operating Agreement” means the Operating Agreement, dated as of the Effective Date, between Toshiba and SanDisk Flash.

“FF Operative Documents” has the meaning set forth in the Master Agreement.

“Fiscal Quarter” means, unless changed by the Board of Executive Officers, a calendar quarter.

“Fiscal Year” means the one year period commencing on April 1 of each year.

“Flash Alliance” means Flash Alliance, Ltd., a Japanese special limited liability company (*tokurei yugen kaisha*).

“Flash Forward” has the meaning set forth in the Master Agreement.

“Flash Partners” means Flash Partners, Ltd., a Japanese special limited liability company (*tokurei yugen kaisha*).

“FP Master Agreement” means the Master Agreement among Toshiba, SanDisk and SanDisk International dated as of September 10, 2004.

“FP Operative Documents” means the Flash Partners Master Agreement, dated as of September 10, 2004, the Share Purchase Agreement between Toshiba and SanDisk Manufacturing, dated as of September 10, 2004, the Operating Agreement between Toshiba and SanDisk International, dated as of September 10, 2004, the Foundry Agreement between Flash Partners and Toshiba, dated as of September 10, 2004, the Purchase and Supply Agreement between Flash Partners and SanDisk International, dated as of September 10, 2004, the Purchase and Supply Agreement between Flash Partners and Toshiba, dated as of September 10, 2004, the Patent Indemnification Agreement between SanDisk Corporation and Toshiba, dated as of September 10, 2004, the Mutual Contribution and Environmental Indemnification Agreement between SanDisk Corporation and Toshiba, dated as of September 10, 2004, and the Lease Agreement between Flash Partners and Toshiba, as owner of the Yokkaichi Facility, dated as of September 10, 2004, in each case as amended by the JVRA.

“FVC Japan” means FlashVision Ltd., a Japanese special limited liability company (*tokurei yugen kaisha*).

“FVC Japan Equipment” means any equipment which is or will, from time to time, be owned or leased by FVC Japan.

“Governmental Action” means any authorization, consent, approval, order, waiver, exception, variance, franchise, permission, permit or license of, or any registration, filing or declaration with, by or in respect of, any Governmental Authority.

“Governmental Authority” means any United States or Japanese federal, state, local or other political subdivision or foreign governmental Person, authority, agency, court, regulatory commission or other governmental body, including the Internal Revenue Service and the Secretary of State of any State.

“Governmental Rule” means any statute, law, treaty, rule, code, ordinance, regulation, license, permit, certificate or order of any Governmental Authority or any judgment, decree, injunction, writ, order or like action of any court or other judicial or arbitration tribunal.

“Indebtedness” of any Person means, without duplication:

- (a) all obligations (whether present or future, contingent or otherwise, as principal or surety or otherwise) of such Person in respect of borrowed money or in respect of deposits or advances of any kind;
- (b) all obligations of such Person evidenced by bonds, debentures, notes or similar instruments;
- (c) all obligations of such Person upon which interest charges are customarily paid, except for trade payables;
- (d) all obligations of such Person under conditional sale or other title retention agreements relating to property or assets purchased by such Person;

(e) all obligations of such Person issued or assumed as the deferred purchase price of property or services (other than with respect to the purchase of personal property under standard commercial terms);

(f) all Indebtedness of others secured by (or for which the holder of such Indebtedness has an existing right, contingent or otherwise, to be secured by) any Lien on property owned or acquired by such Person, whether or not the obligations secured thereby have been assumed;

(g) all guarantees by such Person of Indebtedness of others;

(h) all obligations of such Person to pay rent or other amounts under any lease of (or other arrangement conveying the right to use) real or personal property (or a combination thereof), which obligations would be required to be classified and accounted for as capital leases on a balance sheet of such Person prepared in accordance with Japanese GAAP or US GAAP, as applicable;

(i) all obligations of such Person (whether absolute or contingent) in respect of interest rate swap or protection agreements, foreign currency exchange agreements or other interest or exchange rate hedging arrangements; and

(j) all obligations of such Person as an account party in respect of letters of credit and bankers' acceptances.

The Indebtedness of any Person shall include the Indebtedness of any partnership in which such Person is a general partner.

“Indemnified Parties” means the Party being indemnified’s officers, directors, employees, agents, contractors, subcontractors, and transferees permitted pursuant to the FF Operating Agreement and the Master Agreement.

“Interests” means the issued and outstanding interests (*mochibun*) in Flash Forward.

“Japanese GAAP” means generally accepted accounting principles in Japan as in effect from time to time, consistently applied.

“Japanese GAAS” means generally accepted auditing standards in Japan as in effect from time to time.

“JMDY Agreement” means the Amended and Restated Joint Memory Development Yokkaichi Agreement, dated as of the Effective Date, between Toshiba and SanDisk Corporation.

“JV Y5 NAND Flash Memory Products” has the meaning given in Section 3.2(a)(ii) of the Master Agreement.

“JVRA” means the Joint Venture Restructure Agreement, dated as of January 29, 2009, among SanDisk Corporation and certain of its affiliates, Toshiba Corporation, Flash Alliance and Flash Partners, dated as of January 29, 2009.

“License Agreement” means the Patent Cross License Agreement, dated July 30, 1997, by and between Toshiba and SanDisk, as amended.

“Lien” means, with respect to any asset, (a) any mortgage, deed of trust, lien, pledge, encumbrance, charge or security interest in or on such asset, (b) the interest of a vendor or a lessor under any conditional sale agreement, capital lease or title retention agreement relating to such asset and (c) in the case of securities, any purchase option, call or similar right with respect to such securities.

“L/M” means Equivalent Lots (as defined in the Master Agreement) per month.

“Management Representative” has the meaning given in the Master Agreement.

“Master Agreement” means the Flash Forward Master Agreement, dated as of July 13, 2010, by and among Toshiba, SanDisk and SanDisk Flash.

“Material” means, with respect to any Person, an event, change or effect which is or, insofar as reasonably can be foreseen, will be material to the condition (financial or otherwise), properties, assets, liabilities, capitalization, licenses, businesses, operations or prospects of such Person and, in the case of Flash Forward, the ability of Flash Forward to carry out its then-current Business Plan.

“Member” means the holder of any Interests.

“NAND Flash Memory Products” has the meaning given in Section 3.2 of the Master Agreement.

“Net Book Value” means, with respect to any Person, the total assets of such Person less the total liabilities of such Person, in each case as determined in accordance with Japanese GAAP or US GAAP, as applicable.

“Patent Indemnification Agreement” means the Patent Indemnification Agreement dated as of July 13, 2010, among Toshiba, SanDisk Corporation and SanDisk Flash.

“Percentage” means, with respect to any Member (as defined in the FF Operating Agreement), the percentage of such Member’s ownership interest in Flash Forward. For the avoidance of doubt, as of the date hereof, Percentage means with respect to Toshiba or its Affiliate, 50.1%, and with respect to SanDisk Flash or its Affiliate, 49.9%; *provided, however*, if either Member transfers all of its Interests to any Affiliate in accordance with the FF Operating Agreement, its Percentage shall be 0% and such Affiliate transferee shall receive the entire Percentage of the transferring Member.

“Permitted Liens” means (a) the rights and interests of Flash Forward, either Party or any Affiliate of any such Person as provided in the FF Operative Documents, and (b) Liens for Taxes which are not due and payable or which may after contest be paid without penalty or which are being contested in good faith and by appropriate proceedings and so long as such proceedings shall not involve any substantial risk of the sale, forfeiture or loss of any part of any relevant asset or title thereto or any interest therein.

“Person” means any individual, firm, company, corporation, limited liability company, unincorporated association, partnership, trust, joint venture, Governmental Authority or other entity, and shall include any successor (by merger or otherwise) of such entity.

“Product Development Agreement” means the Amended and Restated Product Development Agreement, dated as of the Effective Date, between Toshiba and SanDisk Corporation.

“SanDisk Corporation” means SanDisk Corporation, a Delaware corporation.

“SanDisk Flash” means SanDisk Flash B.V., a company organized under the laws of The Netherlands.

“SanDisk Ireland” means SanDisk (Ireland) Limited, a company organized under the laws of the Republic of Ireland.

“SanDisk International” means SanDisk (Cayman) Limited, a company organized under the laws of the Cayman Islands.

“SanDisk Purchase and Supply Agreement” means the Purchase and Supply Agreement, dated as of the Effective Date, between SanDisk Flash and Flash Forward.

“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 as used in any FF Operative Document, when used in relation to a Party or any of its Affiliates, shall not include Flash Forward or any of its Subsidiaries.

“Tax” or “Taxes” means all United States or Japanese Federal, state, local or other political subdivision and foreign taxes, assessments and other governmental charges, including: (a) taxes based upon or measured by gross receipts, income, profits, sales, use or occupation and (b) value added, ad valorem, transfer, franchise, withholding, payroll, employment, excise or property taxes, together with (c) all interest, penalties and additions imposed with respect to such amounts and (d) any obligations under any agreements or arrangements with any other Person with respect to such amounts.

“Termination Date” means the date on which one Member, itself or together with its Affiliates, holds one hundred percent (100%) of the interests of Flash Forward or the date Flash Forward is dissolved in accordance with applicable law.

“Toshiba” means Toshiba Corporation, a Japanese corporation.

“Toshiba Capacity” has the meaning set forth in the JVRA.

“Toshiba Licensed Patent” has the meaning given in the Cross License Agreement.

“Toshiba- SanDisk Flash Services Agreement” means the Services Agreement, dated as of the Effective Date, between SanDisk Flash and Toshiba.

“Toshiba Purchase and Supply Agreement” means the Purchase and Supply Agreement, dated as of the Effective Date, between Toshiba and Flash Forward.

“Transfer” means any transfer, sale, assignment, conveyance, creation of any Lien (other than a Permitted Lien), or other disposal or delivery, including by dividend or distribution, whether made directly or indirectly, voluntarily or involuntarily, absolutely or conditionally, or by operation of law or otherwise.

“Unique Activities” means production activities of Flash Forward at the request of either Member to (i) implement changes in the manufacturing processes to be employed for Products to be manufactured for such Member (or its Affiliates) that are not agreed to by the other Member, (ii) commence manufacturing other Products for the requesting Member (or its Affiliates) that the other Member does not desire to have manufactured for it and which require a change in manufacturing processes or in the utilization of the Facility or production

resources, or (iii) implement any other change in its operations in order to manufacture Products specifically for the requesting Member (or its Affiliates).

“US GAAP” means generally accepted accounting principles in the United States as in effect from time to time, consistently applied.

“US GAAS” means generally accepted auditing standards in the United States as in effect from time to time.

“Y3 Facility” means the facility at which Y3 NAND Flash Memory Products are manufactured for Flash Partners.

“Y3 NAND Flash Memory Products” has the meaning given in Section 3.2(a)(iii) of the Master Agreement.

“Y4 Facility” means the facility at which Y4 NAND Flash Memory Products are manufactured for Flash Alliance.

“Y4 NAND Flash Memory Products” has the meaning given in Section 3.2(a)(iii) of the Master Agreement.

“Y5 Facility” has the meaning given in the Master Agreement.

“Y5 NAND Flash Memory Products” has the meaning given in Section 3.2(a)(ii) of the Master Agreement.

“Yokkaichi Facility” means Toshiba’s facilities in Yokkaichi Japan, including the FVC Japan Equipment, the Y3 Facility, the Y4 Facility, the Y5 Facility and Toshiba’s Asahi facility.

Rules of Construction and Documentary Conventions

2.1 Amendment and Waiver. No amendment to or waiver of this Agreement shall be effective unless it shall be in writing, identify with specificity the provisions of this Agreement that are thereby amended or waived and be signed by each party hereto. Any failure of a party to comply with any obligation, covenant, agreement or condition contained in this Agreement may be waived by the party entitled to the benefits thereof only by a written instrument duly executed and delivered by the party granting such waiver, but such waiver or failure to insist upon strict compliance with such obligation, covenant, agreement or condition shall not operate as a waiver of, or estoppel with respect to, any subsequent or other failure of compliance.

2.2 Severability. If any provision of this Agreement or the application of any such provision is invalid, illegal or unenforceable in any jurisdiction, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement (except as may be expressly provided in this Agreement) or invalidate or render unenforceable such provision in any other jurisdiction. To the extent permitted by applicable law, the parties hereto waive any provision of law that renders any provision of this Agreement invalid, illegal or unenforceable in any respect. The parties hereto shall, to the extent lawful and practicable, use their reasonable efforts to enter into arrangements to reinstate the intended benefits, net of the intended burdens, of any such provision held invalid, illegal or unenforceable. If the intent of the Parties for entering into the FF Operative Documents, considered as a single transaction, cannot be preserved, the FF Operative Documents shall either be renegotiated or terminated by mutual agreement of the Parties.

2.3 Assignment. Except as may otherwise be specifically provided in this Agreement, no party hereto shall 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 shall not require any consent of the other parties) without the prior written consent of each other party hereto (which consent may be withheld in each such other party's sole discretion), and any such purported Transfer without such consent shall be void.

2.4 Remedies.

- (a) Except as may otherwise be specifically provided in this Agreement, 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 the Master Agreement and in Section 2.5 of this Appendix A 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 this 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. If due to the occurrence of an act of God, any party is prevented from providing training, technical assistance or other similar support required to be provided to Flash Forward pursuant to this Agreement, such party shall have an additional 30 day period to make alternative arrangements to provide such support.

2.5 Arbitration. Any dispute concerning this Agreement shall be referred to the Management Representatives and handled by it in accordance with the Master Agreement. If the Management Representatives cannot resolve such dispute in accordance with the terms of the 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 ICC shall be borne equally by the Parties.

2.6 Damages Limited. 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 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.

2.7 Parties in Interest; Limitation on Rights of Others. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their permitted successors and assigns. Nothing in this Agreement, whether express or implied, shall give or be construed to give any Person (other than the parties hereto and their permitted successors and assigns) any legal or equitable right, remedy or claim under or in respect of this Agreement, unless such Person is expressly stated in such agreement or instrument to be entitled to any such right, remedy or claim.

2.8 Table of Contents; Headings. The Table of Contents and Article and Section headings of this Agreement are for convenience of reference only and shall not affect the construction of or be taken into consideration in interpreting any such agreement or instrument.

2.9 Counterparts; Effectiveness. This Agreement may be executed by the parties hereto in separate counterparts, each of which when so executed and delivered shall be an original, but all of which counterparts shall together constitute but one and the same contract. This Agreement shall not become effective until one or more counterparts have been executed by each party hereto and delivered to the other parties hereto.

2.10 Entire Agreement. This Agreement, together with each other FF Operative Documents and the Exhibits, Schedules, Appendices and Attachments hereto and thereto, when completed, constitute the agreement of the parties to the FF Operative Documents with respect to the subject matter thereof and supersede all prior written and oral agreements and understandings with respect to such subject matter.

2.11 Construction. References in this Agreement to any gender include references to all genders, and references in this Agreement to the singular include references to the plural and vice versa. Unless the context otherwise requires, the term “party” when used in this Agreement means a party to this Agreement. References in this Agreement to a party or other Person include their respective permitted successors and assigns. The words “include”, “includes” and “including”, when used in this Agreement, shall be deemed to be followed by the phrase “without limitation”. Unless the context otherwise requires, references used in this Agreement to Articles, Sections, Exhibits, Schedules, Appendices and Attachments shall be deemed references to Articles and Sections of, and Exhibits, Schedules, Appendices and Attachments to, this Agreement. Unless the context otherwise requires, the words “hereof”, “hereby” and “herein” and words of similar meaning when used in this Agreement refer to this Agreement in its entirety and not to any particular Article, Section or provision of this Agreement. Any reference to a FF Operative Document shall include such FF Operative Document as amended or supplemented from time to time in accordance with the provisions thereof.

2.12 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.

2.13 Notices. All notices and other communications to be given to any party under this Agreement shall be in writing and any notice shall be deemed received when delivered by hand, courier or overnight delivery service, or by facsimile (if confirmed within two Business Days by delivery of a copy by hand, courier or overnight delivery service), or five days after being mailed by certified or registered mail, return receipt requested, with appropriate postage prepaid and 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 SanDisk or SanDisk Flash:

SanDisk Corporation
601 McCarthy Boulevard
Milpitas, CA 95035 USA
Telephone: (408) 542-0555
Facsimile: (408) 542-0600
Attention: President and CEO

With a copy to:

SanDisk Corporation
601 McCarthy Boulevard
Milpitas, CA 95035 USA
Telephone: (408) 548-0208
Facsimile: (408) 548-0385
Attention: Vice President and General Counsel

(b) If to Toshiba:

Toshiba Corporation
Semiconductor Company
1-1 Shibaura 1-Chome
Minato-Ku, Tokyo 105-8001 Japan
Telephone: 011 81 3 3457 3362
Facsimile: 011 81 3 5444 9339
Attention: Memory Division, Vice President

With a copy to:

Toshiba Corporation
Semiconductor Company
Legal Affairs Division
1-1 Shibaura 1-Chome
Minato-Ku, Tokyo 105-8001 Japan
Telephone: 011-81-3-3457-3452
Facsimile: 011-81-3-5444-9342
Attention: General Manager

(c) If to Flash Forward:

Flash Forward, Ltd.
800 Yamanoishshikicho,
Yokkaichi, Mie, Japan
Attention: President

With a copy to:

SanDisk Corporation
601 McCarthy Boulevard
Milpitas, CA 95035 USA
Telephone: (408) 542-0510
Facsimile: (408) 542-0640
Attention: Chief Operating Officer

And

Toshiba Corporation
Semiconductor Company
Legal Affairs Division
1-1 Shibaura 1-Chome
Minato-Ku, Tokyo 105-8001 Japan
Telephone: 011-81-3-3457-3452
Facsimile: 011-81-3-5444-9342
Attention: General Manager

2.14 Non Disclosure Obligations. Each party hereto agrees as follows:

- (a) In this Agreement, “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.
- (b) For a period of [***] from the date of receipt of the Confidential Information disclosed by one Party (the “Disclosing Party”) hereunder, the receiving Party (the “Receiving Party”) agrees to safeguard the Confidential Information and to keep it in confidence and to use reasonable efforts, consistent with those used in the protection of its own confidential information, to prevent its disclosure to third parties, except that the Receiving Party shall not be obligated hereunder in any respect to information which:
- (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; or
 - (ii) is or becomes publicly available without breach of this Agreement by the Receiving Party; or
 - (iii) is made available to a third party by the Disclosing Party without restriction on disclosure; or
 - (iv) is rightfully received by the Receiving Party from a third party without restriction and without breach of this Agreement; or
 - (v) is independently developed by the Receiving Party as reasonably evidenced by its written records contemporaneous with such development; or
 - (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 than those provided in this Agreement; or
 - (vii) is required to be disclosed by the order of a governmental agency or legislative body of a court of competent jurisdiction, 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 or regulations, provided that SanDisk shall, prior to any such disclosure required by the U.S. Securities and Exchange Commission, provide Toshiba with notice which includes a copy of the proposed disclosure. Further, SanDisk shall consider Toshiba’s timely input with respect to the disclosure.
- (c) 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 to it. 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 the Disclosing Party shall be entitled to equitable relief in addition to any remedies the Disclosing Party may have hereunder or at law.
- (d) Nothing contained in this Agreement shall be construed as granting or conferring any rights, licenses or relationships by the transmission of the Confidential Information.

(e) 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, including any and all copies thereof, or certify in writing that all such Confidential Information had been destroyed.

2.15 Definitions. The definitions set forth in Article I of this Appendix A shall apply to this Article II.

Schedule 4.5
Litigation, Decrees

For Toshiba: [***]

For SanDisk: [***]

Schs., p. 1

Schedule 4.7

Patents and Proprietary Rights

For Toshiba: [***]

For SanDisk: [***]

Schs., p. 2

Schedule 4.9

Cross License Payment Obligations

For Toshiba: [***]

For SanDisk: [***]

Schs., p. 3

Schedule 6.2(a)

Technology Transfer Costs

[***]

Schs., p. 4

Schedule 7.4(a)

Fixed Manufacturing Costs and Variable Manufacturing Costs

(i) "Fixed Manufacturing Costs" shall include [***].

(ii) "Variable Manufacturing Costs" shall include [***].

Schedules 9.1(f) and 9.1(g) Generally

For the purpose of Schedules 9.1(f) and 9.1(g), the following terms shall have the following meanings, and all capitalized term used herein but not defined herein are defined in the [***]

“Adapter” shall mean [***].

“Card with Controller” shall mean [***].

“Embedded NAND MLC” shall mean [***].

“Embedded NAND SLC” shall mean [***].

“NAND Controller” shall mean [***].

“NAND MLC” shall mean [***].

“NAND SLC” shall mean [***].

“NOR Controller” shall mean [***].

“NOR MLC” shall mean [***].

“NOR SLC” shall mean [***].

“Other IC” shall mean [***].

Schedule 9.1(f)

Royalty in case of Deadlock Termination

[***]

Schs., p. 7

Schedule 9.1(g)

Royalty in case of Event of Deadlock Termination

[***]

Schs., p. 8

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 HAS BEEN IDENTIFIED IN THIS DOCUMENT WITH A PLACEHOLDER IDENTIFIED BY THE MARK “[***]”.

Execution Version

OPERATING AGREEMENT OF FLASH FORWARD, LTD.

Dated as of March 1, 2011

between

TOSHIBA CORPORATION

and

SANDISK FLASH B.V.

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EXHIBITS

Exhibit A - Articles of Incorporation of the Company

SCHEDULES

Schedule 5.3 - Management and Operating Reports
Schedule 6.1 - Capital Contributions
Schedule 8.3 - Monthly Reports

OPERATING AGREEMENT of FLASH FORWARD, LTD., a Japanese limited liability company (*godo kaisha*), dated as of March 1, 2011, between TOSHIBA CORPORATION, a Japanese corporation ("Toshiba"), and SANDISK FLASH B.V., a Netherlands company ("SanDisk").

WHEREAS, Flash Forward, Ltd. (the "Company") is a Japanese limited liability company (*godo kaisha*);

WHEREAS, pursuant to that certain Member Interests Purchase Agreement, dated as of the date hereof, by and between SanDisk and Toshiba, concurrently with the execution hereof, SanDisk has acquired from Toshiba equity interests in the Company representing 49.9% of all outstanding membership interests (any or all of such membership interests (*mochibun*) of the Company shall be referred to herein as "Interests");

WHEREAS, Toshiba holds the remaining 50.1% of outstanding Interests; and

WHEREAS, SanDisk and Toshiba (each a "Member") desire to enter into this Operating Agreement in order to provide, subject to the Companies Act and the Articles of Incorporation of the Company (as amended from time to time, the "Articles") for (i) the business of the Company, (ii) the conduct of the Company's affairs and (iii) the rights, powers, preferences, limitations and responsibilities of the Company's Members, employees and Executive Officers.

Accordingly, Toshiba and SanDisk agree as follows:

1. Definitions, Rules of Construction and Documentary Conventions

1.1 Certain Definitions.

- (a) Capitalized terms used but not defined in the main body of this Agreement shall have the respective meanings assigned to them in that certain Flash Forward Master Agreement, dated as of the date hereof, among SanDisk, SanDisk Corporation and Toshiba (the "Master Agreement") or in Appendix A to the Master Agreement.
- (b) As used herein, the term "Agreement" means this Operating Agreement together with any Exhibits, Schedules, Appendices and Attachments hereto.

1.2 Additional Definitions. The following capitalized terms used in this Agreement shall have the respective meanings assigned in the sections indicated below:

<u>Term</u>	<u>Defined in</u>
“Appendix A”	Recitals
“Articles”	Recitals
“Bankruptcy Event”	Section 11.1(f)
“Board of Executive Officers”	Section 5.1(a)
“Claim”	Section 12.4(a)
“Company”	Recitals
“Deadlock”	Section 10.3(c)
“Deadlock Dissolution Notice”	Section 10.3(e)
“Defaulting Member”	Section 10.4
“Designated Individuals”	Section 10.3(b)
“Executive Officer(s)”	Section 3.5(a)
“Executive Vice President”	Section 5.2(a)
“General Meeting of Members”	Section 4.2(a)
“Indemnified Party”	Section 12.4(a)
“Indemnifying Party”	Section 12.4(a)
“Initiating Member”	Section 10.3(e)
“Interests”	Recitals
“Losses”	Section 12.1(a)
“Master Agreement”	Section 1.1(a)
“Member”	Recitals
“Nondefaulting Member”	Section 10.4
“Notified Party”	Section 11.5
“Notifying Party”	Section 11.5
“Permissible Assignee”	Section 9.1(c)
“Permissible Assignment Agreement”	Section 9.1(c)
“President”	Section 5.2(a)
“Responding Member”	Section 10.3(e)
“SanDisk Representative”	Section 5.3(a)
“Toshiba Representative”	Section 5.3(a)
“Y5 Operating Committee”	Section 5.3(a)

1.3 Rules of Construction and Documentary Conventions. The rules of construction, documentary conventions and general terms and conditions set forth in Appendix A shall apply to, and are hereby incorporated in, this Agreement.

2. General Provisions

2.1 Ownership of Interests; Capital Increase. The rights and obligations of the Members shall be as set forth herein, subject to the Articles and mandatory provisions of the Companies Act.

2.2 Name. The name of the Company is “Flash Forward Godo Kaisha,” which shall be translated as “Flash Forward, Ltd.” in English, and all Company business shall be conducted in that name or such other name as the Members shall mutually agree.

2.3 Principal Office. The principal office of the Company shall be located in Yokkaichi, Mie, or such other place as the Members shall mutually agree.

2.4 Term; Extension. The Company shall be terminated on December 31, 2025, unless extended by mutual written agreement of all of the Members or earlier terminated in accordance with Section 11 (Dissolution). Any such extension shall be effective only upon the written agreement of all of the Members and shall be on such terms and for such period as set forth in such agreement. The Members agree to meet, no later than December 31, 2024, to discuss the possible extension of the term of the Company.

2.5 Scope of Activity. The scope of activity of the Company shall be as set forth in Sections 3.1 (Purpose) and 6.7 (Capacity Sharing Arrangement) of the Master Agreement.

2.6 Powers. The Company shall have all the powers now or hereafter conferred by applicable law on limited liability companies formed under the Companies Act and may do any and all acts and things necessary, incidental or convenient to the purpose specified in Section 2.5 (Scope of Activity).

2.7 Articles of Incorporation. On the date hereof and immediately following the execution of this Agreement, the Members shall hold a General Meeting of the Members and, among other matters agreed between them, vote their Interests to amend the Articles so that they will be in the form of Exhibit A. In the event of any conflict between this Agreement and the Articles, the Members confirm their intent that the terms of this Agreement shall prevail, and on the request of either Member, the Members shall amend the Articles to conform with this Agreement to the extent legally possible; provided that the inability to implement such amendment shall not relieve any Member from liability for any breach of its obligations hereunder. The Articles shall provide that each of the Members shall have the authority of a *gyomu shikko shain* (a “Managing Member”) under the Companies Act.

2.8 Company Actions. The Members hereby authorize the Company, and ratify (including for purposes of Section 4.1 (Matters Requiring the Approval of the Members)) all action having been taken by or on behalf of the Company (including by its Members and Executive Officers) prior to the date hereof, to execute and deliver the FF Operative Documents to which it is a party, including all certificates, agreements and other documents required in connection therewith.

3. Business Operations

3.1 Business Dealings with the Company. Subject to Sections 4.1(a) (Matters Requiring the Approval of the Members) and 5.1(d) (Matters Requiring the Approval of the Board of

Executive Officers), the Company may enter into contracts or agreements, or otherwise enter into transactions or dealings, with any Member or any of their respective Affiliates, and derive and retain profits therefrom. The validity of any such contract, agreement, transaction or dealing or any payment or profit related thereto or derived therefrom shall not be affected by any relationship between the Company and any Member or any of their respective Affiliates, subject to the Companies Act. The Members agree that where practicable and contractually allowable (based on competitive price, availability and other material terms), the Board of Executive Officers will consider whether to utilize any Member or any of their respective Affiliates as the preferred providers of products and services that may be required in the manufacturing operations of the Company, subject to the ability of such Member or Affiliate to meet the Company's manufacturing requirements on competitive terms. Unless otherwise approved by the Members or otherwise expressly provided in the FF Operative Documents, all business dealings of the Company with any Member or any of their respective Affiliates shall be on the most beneficial standard commercial terms and conditions, including volume, price and credit terms, currently offered or made available to unaffiliated customers by such Member or Affiliate, as the case may be, with respect to the products and services to be offered and provided to the Company.

- 3.2 Other Activities. The provisions of Section 6.13 (Other Activities) of the Master Agreement are hereby incorporated herein by reference.
- 3.3 Personnel. The provisions of Section 6.10 (FF Management Structure and Headcount) of the Master Agreement are hereby incorporated herein by reference.
- 3.4 Business Plans and Related Matters.
- (a) Initial and Subsequent Business Plans. The initial Business Plan of the Company, consistent with the Phase I Minimum RUP Commitment and Toshiba's proposed schedule therefor and setting forth the Company's products, pricing, operating budget, capital expenditures, expense budgets, financing plans and other business activities of the Company through the [***] will be agreed upon and certified by the Board of Executive Officers as soon as practicable after the Closing.
- (i) The initial Business Plan and each successive Business Plan will, at the time such Business Plan is in effect, represent the Company's then-current forecast of the proposed operations of the Company.
 - (ii) An updated Business Plan complying with Section 3.4(b) (Form and Scope) in respect of each successive Fiscal Year after the [***] shall be prepared under the direction of the President of the Company and submitted to the Board of Executive Officers for review and approval not later than the [***] preceding the commencement of such Fiscal Year.
 - (iii) When the proposed Business Plan in respect of a Fiscal Year is approved by the Board of Executive Officers, it shall constitute the Business Plan of the Company for such Fiscal Year and the Company and its Executive Officers and employees shall implement such Business Plan, which shall be the basis of the Company's operations for such Fiscal Year. Upon approval, the approved Business Plan shall constitute the approved operational, financing and capital expenditure budget, subject to Section 6.3 of the Master Agreement. The Board of Executive Officers shall have the authority pursuant to Section 5.1(d) (Matters Requiring the Approval of the Board of Executive Officers) to amend the most recently approved Business Plan, including the operating budget contained therein, and

any Member may request that the Board of Executive Officers review the Company's operating results and prospects, as well as market conditions, and consider a proposal for amendment or review of the most recently approved Business Plan at any regularly scheduled or special meeting of the Board of Executive Officers and upon such request, the Board of Executive Officers shall in good faith make such review and/or consider such proposal.

- (b) Form and Scope. Each Business Plan shall contain a statement of long-range strategy and short-range tactics detailing quantitative and qualitative goals for the Company and relating the attainment of those goals to the Company's manufacturing objectives, and shall include such items as planned capital expenditures, planned product development, planned product output and projected product cost, sales forecasts, total headcount, total spending and revenue and profit projections, financing plans and tax planning. No Business Plan shall be deemed to be an amendment of this Agreement. Any capital commitments made in any Business Plan for a period after the Fiscal Year to which the Business Plan applies shall be considered non-binding for purposes of any FF Operative Document.
- (c) Approval. Other than the initial Business Plan (which shall be approved in accordance with Section 3.4(a)), the Board of Executive Officers shall vote upon any proposed Business Plan, with such modifications as it may deem necessary, before [***] preceding the commencement of each Fiscal Year. Subject to Sections 10.3(c), (e) and (f) (Dispute Resolution; Deadlock) herein and Section 6.3 of the Master Agreement, pending approval by the Board of Executive Officers of any proposed Business Plan, the most recently approved Business Plan shall continue in effect; *provided, however*, the Board of Executive Officers may, by unanimous vote, adopt an amended interim business plan for the Company's operations until it is able to reach agreement on the proposed Business Plan for the forthcoming year.

3.5 Standard of Care.

- (a) Each Member and each Executive Officer, shall be entitled to rely (unless such Person has knowledge or information concerning the matter in question that makes reliance unwarranted) on information, opinions, reports or statements, including financial statements and other financial data, if prepared or presented by:
- (i) one or more managers or employees of the Company who such Member or Executive Officer believes in good faith to be reliable and competent in the matters presented; or
 - (ii) legal counsel, public accountants or other Persons as to matters that such Member or Executive Officer believes to be within such Person's professional or expert competence.
- (b) Each Member shall also be entitled to rely upon information, opinions, reports or statements, including financial statements and other financial data, prepared or presented by the Board of Executive Officers pursuant to the responsibilities delegated to the Board of Executive Officers pursuant to this Agreement.

- 3.6 Use of Names. Except as may be expressly provided in the FF Operative Documents, nothing in this Agreement shall be construed as conferring on the Company or any Member the right to use in advertising, publicity or other promotional activities any name, trade name, trademark or other designation of any other Member or any of its Affiliates, including any contraction, abbreviation or simulation of any of the foregoing.

4. Actions by the Members

4.1 Matters Requiring the Approval of the Members.

- (a) Notwithstanding any provision of the Articles to the contrary, no action shall be taken by or on behalf of the Company in connection with any of the following matters without the prior unanimous written approval of the Members, each acting through the Executive Officers appointed by it:
- (i) any amendment, restatement or revocation of the Articles;
 - (ii) any amendment to or renewal of any FF Operative Document between the Company and any Member or any of their respective Affiliates;
 - (iii) any change in the scope of activity or strategic direction of the Company's business;
 - (iv) any merger, consolidation or other business combination to which the Company or any of its Subsidiaries is a party, or any other transaction to which the Company is a party resulting in a Change of Control of the Company;
 - (v) any sale, lease, pledge, assignment or other disposition of assets of the Company in an amount (in terms of consideration to be received by the Company) in excess of ¥5,000,000 in one transaction or a series of related transactions, other than as expressly provided for in the FF Operative Documents or as set forth in the most recently approved Business Plan;
 - (vi) the approval of any transaction or agreement between the Company and any Member or any of their respective Affiliates (other than transactions or agreements expressly provided for or authorized by an FF Operative Document or the most recently approved Business Plan) or any amendment thereto (including the waiver of any material term thereof), other than any such transaction, agreement or amendment that contains generally available, arm's length commercial terms and is in an amount (in terms of payments to be made or the value of services or products to be provided or delivered) less than ¥5,000,000 for any single transaction or agreement or for substantially identical transactions within a twenty-four (24) month period (or a waiver that does not materially adversely affect the rights and benefits of the Company), other than as set forth in the most recently approved Business Plan;
 - (vii) incurring Indebtedness in an amount in excess of ¥1,000,000 or an increase in aggregate Indebtedness in excess of ¥1,000,000 in any calendar quarter, other than as authorized by Section 5.1(d) (Matters Requiring the Approval of the Board of Executive Officers);
 - (viii) with respect to the Company or any of its Subsidiaries, (A) the voluntary commencement of any proceeding or the voluntary filing of any petition seeking relief under Japanese or foreign bankruptcy, insolvency, receivership or similar law, (B) the consent to the institution of, or the failure to contest in a timely and appropriate manner, any involuntary proceeding or any involuntary filing of any petition of the type described in clause (A) above, (C) the application for or consent to the appointment of a receiver, trustee, custodian, sequestrator, conservator or similar official for the Company, or for a substantial part of its property or assets, (D) the filing of an answer admitting the material allegations of

a petition filed against the Company in any such proceeding described above, (E) the consent to any order for relief issued with respect to any such proceeding described above, (F) the making of a general assignment for the benefit of creditors, (G) the admission in writing of the Company's inability, or the failure of the Company generally, to pay its debts as they become due or (H) the taking of any action for the purpose of effecting any of the foregoing;

- (ix) subject to Section 9.1(a) and Appendix A, the granting of consent to the transfer of any Interests;
 - (x) the winding up, dissolution or liquidation of the Company or any of its Subsidiaries (other than the dissolution of the Company pursuant to and as contemplated by Section 11 (Dissolution));
 - (xi) the acquisition of any business, entry into any joint venture or partnership, or creation of any direct or indirect Subsidiary of the Company;
 - (xii) the commitment of the Company to any development project;
 - (xiii) the sale, license, assignment or other Transfer of any of the Company's intellectual property owned or in its possession (including any technology or know-how, whether or not patented, any trademark, trade name or service mark, any copyright or any software or other method or process);
 - (xiv) any increase or decrease in the capital amount of the Company;
 - (xv) any other matter material to the operation, staffing, business or financial condition of the Company; and
 - (xvi) any matter required by the Companies Act to be decided, in the case of a limited liability company (*godo kaisha*) by its Members (or its Managing Members, as the case may be).
- (b) Each Member may exercise its vote by proxy; provided, that such proxy shall submit to the Company, prior to the relevant General Meeting of Members, a power of attorney duly signed by the Member and/or other document establishing its power of representation; and provided, further, that the conferment of the power of proxy for one General Meeting of Members shall not be deemed to be a conferment of the power of proxy for any subsequent General Meeting of Members.
- (c) Notwithstanding the requirements of Section 4.1(a) (Matters Requiring the Approval of the Members) relating to agreements between the Company and any Member or any of their respective Affiliates, any question regarding a material default or alleged material default (including any question regarding a breach of representation or alleged breach of representation) under any FF Operative Document between the Company and any Member or any of their respective Affiliates shall be subject to the dispute resolution process set forth in Sections 10.3(a) and (b) (Dispute Resolution; Deadlock).
- 4.2 General Meetings of Members.
- (a) The Members acknowledge and agree that while under the Companies Act a limited liability company (*godo kaisha*) does not have a requirement to convene a General Meeting of Members, for convenience they will in this Agreement (and elsewhere in the FF Operative Documents) refer to such meeting or meetings as are required under this

Agreement as a “General Meeting of Members.” An annual General Meeting of Members shall be held within three (3) months from the date immediately following the last day of each Fiscal Year of the Company. A special General Meeting of Members may be held at any time and may be called by each Member, a resolution of the Board of Executive Officers or in any other manner permitted by the Articles. All General Meetings of Members shall be called and held in accordance with the Articles. The General Meetings of Members may be held at the Company’s principal office or at any other location, or, if all the Members agree, by telecommunications conferences by means of which all persons participating in the meeting can hear and be heard by each other, provided that such communications equipment continues to be operational throughout the meeting. The Members may by unanimous written consent effect any resolution that could otherwise be resolved at a General Meeting of the Members.

- (b) Except as otherwise provided in this Agreement, each Member shall be entitled to one vote for each JPY 1 contributed by such Member in respect of its Interests.
- (c) The minutes of every General Meeting of Members shall be kept with the Company’s records referred to in Section 5.5 (Records).
- (d) The quorum necessary for any General Meeting of Members shall be those Persons entitled to cast all of the votes held by the Members. A quorum shall be deemed not to be present at any meeting for which notice was not properly given under the Articles, unless the Member as to whom such notice was not properly given attends such meeting without protesting the lack of notice or duly executes and delivers a written waiver of notice or a written consent to the holding of such meeting.

4.3 Restrictions on Members. No Member may, without the prior written consent of the other Member:

- (a) confess any judgment against the Company;
- (b) enter into any agreement on behalf of or otherwise purport to bind the other Member or the Company;
- (c) do any act in contravention of this Agreement;
- (d) except as contemplated by Section 11 (Dissolution), dispose of the goodwill or the business of the Company; or
- (e) assign the property of the Company in trust for creditors or on the assignee’s promise to pay any Indebtedness of the Company.

5. **Management and Operations of Company**

5.1 Meetings of the Board of Executive Officers.

- (a) General. The Members agree to form a steering committee consisting of executive officers nominated by each of the Members (each person so nominated, an “Executive Officer”). The Members acknowledge and agree that while under the Companies Act a limited liability company (*godo kaisha*) does not have a Board of Executive Officers, for convenience they will in this Agreement (and elsewhere in the FF Operative Documents) refer to such committee as the “Board of Executive Officers” (“*yakuin kai*”). Except as otherwise provided herein, as between the Parties the Board of Executive Officers is vested with complete and exclusive power to direct and control the Company and to

manage the Company as provided by the Articles and this Agreement, as it may be amended from time to time. The Board of Executive Officers shall have the power to delegate such responsibilities as it may deem appropriate from time to time (including certain day-to-day responsibilities set forth in Section 5.2 (Officers; Employees) and Section 5.3 (Y5 Operating Committee)). The Members shall cooperate in taking any necessary corporate steps under the Companies Act to attain the purposes of this Section 5, including without limitation, approval by the Executive Officers and General Meeting of Members with respect to decisions made by the Board of Executive Officers.

(b) Members of the Board of Executive Officers; Voting; etc.

- (i) The Board of Executive Officers of the Company shall consist of six (6) Executive Officers, three (3) of which shall be nominated by Toshiba, and the other three (3) of which shall be nominated by SanDisk; provided that the total number of Executive Officers of the Company may be changed by mutual agreement of the Members.
- (ii) Executive Officers shall be elected to serve until complete adjournment of the annual General Meeting of Members for the Fiscal Year last to end within one (1) year after his or her assumption of the office of Executive Officer, and shall be eligible for re-election.
- (iii) Subject to the fiduciary duty of the *shokumu shikko sha* under the Companies Act, as applicable, each Executive Officer shall serve at the pleasure of the designating Member and may be removed as such, with or without cause, and his or her successor designated, by the designating Member. Each Member shall have the right to designate a replacement Executive Officer in the event of any vacancy among such Member's appointees.
- (iv) Each Member shall bear any cost incurred by any Executive Officer nominated by it to serve on the Board of Executive Officers, and no Executive Officer shall be entitled to compensation from the Company for serving in such capacity.
- (v) Each Member shall notify the other Member and the Company of the name, business address and business telephone, e-mail address and facsimile numbers of each Executive Officer that such Member has nominated. Each Member shall promptly notify the other Member and the Company of any change in such Member's nominated or of any change in any such address or number.
- (vi) For purposes of any approval or action taken by the Board of Executive Officers, each Executive Officer shall have one vote. Unless otherwise required under Japanese law, unanimous agreement of all Executive Officers is required for valid action to be taken by the Board of Executive Officers.
- (vii) At any meeting of the Board of Executive Officers, each Executive Officer may exercise his or her vote by proxy; provided, that such proxy shall submit to the Company, prior to the relevant meeting, a power of attorney duly signed by the Executive Officer and/or other document establishing his or her power of representation; and provided, further, that the conferment of the power of proxy for one meeting of the Board of Executive Officers shall not be deemed to be a conferment of the power of proxy for any subsequent meeting of the Board of Executive Officers.

- (viii) The quorum necessary for any meeting of the Board of Executive Officers shall be those Executive Officers entitled to cast all of the votes held by the members of the Board of Executive Officers. A quorum shall be deemed not to be present at any meeting for which notice was not properly given under Section 5.1(c) (Meetings, Notices, etc.), unless the Executive Officer or Executive Officers as to whom such notice was not properly given attend such meeting without protesting the lack of notice or duly execute and deliver a written waiver of notice or a written consent to the holding of such meeting.
 - (ix) In the event that, under the Companies Act, an action approved by the Board of Executive Officers requires the approval of each Member in order to be a duly authorized action of the Company, each Member agrees promptly to provide such further evidence of approval as may be required by any third parties with whom the Company transacts or wishes to transact business.
- (c) Meetings, Notice, etc. Meetings of the Board of Executive Officers shall be held at such location or locations as may be selected by the Board of Executive Officers from time to time.
- (i) Regular meetings of the Board of Executive Officers shall be held on such dates and at such times as shall be determined by the Board of Executive Officers and shall be held at least on a quarterly basis, unless otherwise agreed by the Executive Officers.
 - (ii) Notice of any regular meeting or special meeting pursuant to Section 5.1(c)(iii) shall be given to each Executive Officer at least ten (10) Business Days prior to such meeting in the case of a meeting in person or at least five (5) Business Days prior to such meeting in the case of a meeting by conference telephone or similar communications equipment pursuant to Section 5.1(c)(vii), which notice shall state the purpose or purposes for which such meeting is being called and include any supporting documentation relating to any action to be taken at such meeting.
 - (iii) Special meetings of the Board of Executive Officers may be called by any Executive Officer by notice given in accordance with the notice requirements set forth in Section 5.1(c)(ii); provided that the Executive Officers appointed by the Member that is not represented by the Executive Officer calling such special meeting shall be entitled to select a convenient location for the meeting and to suggest an alternative time or times if the designated time is not convenient for them. No action may be taken and no business may be transacted at such special meeting which is not identified in such notice unless (A) such action or business is incidental to the action or business for which the special meeting is called or (B) such action or business does not materially adversely affect any Member or the Company.
 - (iv) Each Member may invite a reasonable number of observers to all meetings of the Board of Executive Officers.
 - (v) The minutes of each meeting of the Board of Executive Officers shall be delivered to all Executive Officers within twenty (20) calendar days after such meeting. Material to be presented at a Board of Executive Officers meeting shall be delivered to all Executive Officers ten (10) Business Days prior to such meeting if feasible in light of the circumstances giving rise to the need for such meeting, or in any event a minimum of five (5) Business Days prior to such meeting.

- (vi) The actions taken by the Board of Executive Officers at any meeting, however called and noticed, shall be as valid as though taken at a meeting duly held after regular call and notice if (but not until), either before, at or after the meeting, each Executive Officer as to whom such meeting was improperly held duly executes and delivers a written waiver of notice or a written consent to the holding of such meeting; provided, however, any Executive Officer who is present at a meeting and does not protest the failure of notice shall be deemed to have received adequate notice thereof. A vote of the Board of Executive Officers may be taken only (A) at a meeting of the members thereof duly called and held or (B) without a meeting by the execution by the Executive Officers eligible to cast all the votes on the Board of Executive Officers of a consent setting forth the action so taken, and identified as a unanimous written consent of the Executive Officers.
 - (vii) Upon the consent of both the President and the Executive Vice President, meetings of the Board of Executive Officers may be held by conference telephone or similar communications equipment by means of which all Executive Officers participating in the meeting can be heard by all other participants; provided that such communications equipment continues to be operational throughout the meeting. Any Executive Officer may elect to participate in a meeting by conference telephone or similar communications equipment upon sufficient advance notice to permit arrangements therefor to be made.
 - (viii) At each meeting, the Board of Executive Officers shall consider (A) any of the items set forth in Section 5.1(d) (Matters Requiring the Approval of the Board of Executive Officers) that may require the Board of Executive Officers' attention, (B) any items added to the Board of Executive Officers' agenda for discussion by any Member and (C) such other matters as the Board of Executive Officers decides to review; *provided, however*, that the Executive Officers shall not be required to vote or take other action (other than carrying on discussions) on matters that were not placed on the meeting agenda at least five (5) Business Days in advance of the time set for the meeting unless such action or business is incidental to the action or business which was otherwise properly on the agenda and considered at such meeting.
 - (ix) The Board of Executive Officers shall, from time to time, elect one of its members to preside at its meetings. The Board of Executive Officers may establish reasonable rules and regulations to (A) require Executive Officers to call meetings and perform other administrative duties, (B) limit the number and participation of observers, if any, and require them to observe confidentiality obligations and (C) otherwise provide for the keeping and distribution of minutes and other internal Board of Executive Officers governance matters not inconsistent with the terms of this Agreement.
 - (x) The Board of Executive Officers shall have the authority to establish subcommittees and to delegate to any such subcommittee any of the Board of Executive Officers' responsibilities; provided, however, the power of the Board of Executive Officers to approve the matters set forth in Section 5.1(d) (Matters Requiring the Approval of the Board of Executive Officers) may not be delegated to a subcommittee.
- (d) Matters Requiring the Approval of the Board of Executive Officers. Notwithstanding any provision of the Articles to the contrary, no action may be taken by or on behalf of the Company in connection with any of the following matters without the unanimous written approval of the Board of Executive Officers:

- (i) any sale, lease, pledge, assignment or other disposition of assets of the Company in an amount (in terms of consideration to be received by the Company) in excess of ¥1,000,000 in one transaction or a series of related transactions, other than as set forth in the most recently approved Business Plan;
- (ii) the approval of any transaction or agreement between the Company and any Member or any of their respective Affiliates (other than transactions or agreements expressly provided for or authorized by an FF Operative Document or the most recently approved Business Plan) or any amendment thereto (including the waiver of any material term thereof), other than any such transaction, agreement or amendment that contains generally available, arm's length commercial terms and is in an amount (in terms of payments to be made or the value of services or products to be provided or delivered) less than ¥1,000,000 for any single transaction or agreement or for substantially identical transactions within a twenty-four (24) month period (or a waiver that does not materially adversely affect the rights and benefits of the Company), other than as set forth in the most recently approved Business Plan;
- (iii) the purchase, lease, license or other acquisition of (A) personal property or services or (B) any list of capital equipment approved by the Members, in each case in an amount (in terms of payments to be made or the value of services or products to be provided or delivered) exceeding ¥1,000,000 in any one transaction or a series of related transactions, other than as provided for in the most recently approved Business Plan;
- (iv) the selection of attorneys, accountants, auditors and financial advisors;
- (v) the adoption of accounting and tax policies, procedures and principles;
- (vi) incurring any Indebtedness;
- (vii) the hiring or termination of any employees referenced in Section 5.2(a) (Officers; Employees) who are not members of the SanDisk Team, if any;
- (viii) the adoption of or changes to the forms of confidentiality, assignment or disclosure of intellectual property or employment agreements to be entered into between the Company and its employees;
- (ix) the adoption of or changes to any employee benefit plan, including any incentive compensation plan;
- (x) the amount and timing of any distributions;
- (xi) the commencement or settlement of litigation by or against the Company;
- (xii) the purchase, sale or lease (as lessor or lessee) of any real property;
- (xiii) any acquisition of securities or any other ownership interest in any entity;
- (xiv) the making of any public announcements by or on behalf of the Company; provided, that in any case any such public announcements must otherwise comply with the requirements of Section 5.2 (Public Announcements) of the Master Agreement, if applicable;

- (xv) the entry into or amendment of any collective bargaining arrangements or the waiver of any material provision or requirement thereof;
- (xvi) the approval of a proposed Business Plan, or the amendment to the most recently approved Business Plan, in each case including the operating budget contained therein;
- (xvii) the incurrence of capital expenditures in excess of those provided for in the most recently approved Business Plan or the commitment of the Company to any development projects other than as provided for in the most recently approved Business Plan;
- (xviii) subject to Section 5.1(c)(x), the establishment of any subcommittees or delegation of authority of the Board of Executive Officers;
- (xix) the authorization and approval of any filing with, public comments to, or negotiation/discussion with, any Governmental Authority (excluding regular operating filings and other routine administrative matters);
- (xx) the approval of Unique Activities to be performed by the Company at the request of any Member, in connection with which the Board of Executive Officers shall be satisfied that such Member has reached agreement with the Company as to the payment by such Member of all costs incurred in connection with such Unique Activities and that adequate provision has been made by such Member for the funding of any additional required capital expenditures required in conjunction with such Unique Activities;
- (xxi) the decision of the Company to negotiate external sources of additional wafer fabrication capacity for NAND Flash Memory Products;
- (xxii) any dispute referred to the Board of Executive Officers by the Y5 Operating Committee pursuant to Section 5.3(b); and
- (xxiii) such other matters as the Board of Executive Officers decides, in its sole discretion, to review.

5.2 Officers; Employees.

- (a) Unless otherwise mutually agreed by the Members, the Executive Officers of the Company with specific titles shall be designated as: the President/Chief Executive Officer (“President”) and the Executive Vice President (“Executive Vice President”). The President and Executive Vice President shall be elected by the Board of Executive Officers and serve three successive one-year terms, with the first such set of terms ending at complete adjournment of the annual meeting of Members for the Fiscal Year last to end within one (1) year after his or her assumption of the officership. Toshiba shall have the right to nominate the first President and SanDisk shall have the right to nominate the first Executive Vice President, and then the Members will then alternate such nominating rights for each three year term for such positions. The President or Executive Vice President, as applicable, nominated by a Member, shall be designated by such Member as a *shokumu shikko sha* of the Company on behalf of such Member for purposes of the Companies Act. Each nominee for the President and for the Executive Vice President shall be subject to the consent of the non-nominating Member, which consent shall not unreasonably be withheld. In addition to the President and Executive Vice President, the Board of Executive Officers may appoint such other officers from time to time as it

deems necessary or advisable in the conduct of the business and affairs of the Company. Any individual may hold more than one office.

- (b) The President shall have the authority to retain other senior management of the Company, subject to the prior approval of the Board of Executive Officers.
- (c) The Company shall have agreements with and policies applicable to each of its officers, employees and consultants who are not members of the SanDisk Team, in forms acceptable to each Member, and shall also have appropriate arrangements with its members of the SanDisk Team, in each case with respect to (i) protection of confidential information, (ii) patent and copyright assignment, (iii) invention disclosure (including improvements and advances) and assignments thereof and (iv) in respect of certain employees who are not members of the SanDisk Team, non-competition.

5.3 Y5 Representatives; Y5 Operating Committee.

- (a) The Company shall have an Operating Committee for Y5 Facility operations (the “Y5 Operating Committee”) consisting of a senior executive designated by each of SanDisk and Toshiba (each such individual the “SanDisk Representative” and the “Toshiba Representative,” respectively) each of whom shall represent the designating Party on a day-to-day basis at the Y5 Facility. Each Member shall notify the other Member in advance of any replacement of its representative. If a Member requests in good faith that the other Member’s representative be replaced with another person from the other Member’s organization, the other Member shall consider and discuss in good faith with the requesting Member such request, provided that such replacement, if any, shall be determined solely by such other Member. [***]
- (b) The Y5 Operating Committee shall work together and endeavor to make the Y5 Facility the most advanced and competitive memory fabrication facility in the world. The Y5 Operating Committee shall have the authority to determine all matters concerning the day-to-day operations of the Company and the Y5 Facility (including staffing matters as provided in Section 6.10(a)(iii) of the Master Agreement), subject to those matters reserved herein to the Board of Executive Officers or the Members as well as to the requirements of this Agreement, the Articles and the Companies Act. The Y5 Operating Committee shall communicate on a day-to-day basis with respect to the status of Y5 Facility operations and any other issues that may arise, and shall meet in person no less than two (2) times per week, or such other times and frequency as may be agreed upon by all members of such committee. If the members of the Y5 Operating Committee are unable to agree on any issue after thirty (30) days, they shall submit such matter together with their respective recommendations to the Board of Executive Officers, which shall endeavor to immediately resolve the issue. If the Board of Executive Officers is unable to agree on any such issue after ten (10) days, such issue shall be submitted to the Management Representatives for final resolution.
- (c) The Y5 Operating Committee shall hold a monthly review meeting in English at the Yokkaichi Facility on [***] of each calendar month, unless otherwise agreed by the Members or the Y5 Operating Committee. The Y5 Operating Committee shall prepare and distribute to each Member (at least three (3) Business Days in advance of the monthly review meetings) monthly reports in English with respect to the engineering activities, operations and financial affairs of the Company and the Y5 Facility.
- (d) Upon the request of either Member, the Y5 Operating Committee shall provide the Members with (i) any management or operation reports of the Company related to the Y5 Facility (which neither Member shall have an obligation to translate) and

(ii) simultaneously in Japanese and English, those management and operating reports identified on Schedule 5.3 as mutually agreed upon from time to time by the Parties. Upon reasonable request from SanDisk, Toshiba employees shall explain such reports to SanDisk's employees and respond to questions from SanDisk's employees; provided, however that SanDisk acknowledges and agrees that Toshiba shall not be responsible for SanDisk's failure to understand any such reports.

- 5.4 Insurance. The Company shall maintain insurance against such liabilities and other risks associated with the conduct by the Company of its business and in such amounts and against such risks as agreed by the Members, and in any event as is generally maintained by companies engaged in a business similar to that of the Company.
- 5.5 Records. The Company shall maintain the following records at its principal office:
- (a) a current list of the full name set forth in alphabetical order and last known business address of each Member and Executive Officer;
 - (b) a copy of the Articles, and all articles of amendment thereto;
 - (c) a copy of this Agreement and all amendments hereto;
 - (d) a copy of all financial statements of the Company for the three most recent Fiscal Years;
 - (e) a copy of the Company's income tax or information returns and reports, if any, for the three most recent years;
 - (f) a copy of all indentures, loan agreements, lease agreements, guarantees, security agreements, promissory notes, licensing or other intellectual property agreements, agreements that relate to the payment or receipt by the Company of amounts in excess of ¥5,000,000 or that are not terminable by the Company upon ninety (90) days notice, documents, if any, evidencing employee compensation arrangements, employee pension or other benefit arrangements, and similar documents and instruments executed and delivered by the Company;
 - (g) a list of all contributions made to the Company by the Members; and
 - (h) a record of all distributions by the Company to each Member.

The Members and/or the Executive Officers and/or their respective designees (which shall be limited to its employees or professional advisers subject to appropriate confidentiality obligations) shall have reasonable access to the records of the Company during normal business hours upon reasonable request. Copies of records shall be made available and delivered to the Members and/or the Executive Officers promptly after reasonable request for same, provided the requesting party pays for copy and delivery charges.

6. Capital Contributions; Distributions

6.1 Capital Contributions.

- (a) The Members shall be deemed to have made Capital Contributions to the Company in the amounts set forth opposite their respective names on Schedule 6.1.
- (b) No Member shall be obligated to make any additional Capital Contributions to the Company, unless otherwise mutually agreed upon by the Members in writing, in which

case such additional Capital Contributions shall be made in proportion to the Members' respective Percentages as of the date of such additional Capital Contribution.

6.2 Distributions.

- (a) General. Notwithstanding any provision of the Articles to the contrary, and subject to Section 11.8 (Liquidation Proceeds), unless otherwise agreed by the Members, no distributions of cash (or in the case of Section 11.8, other property) shall be made by the Company to the Members for a period of three (3) years from the date of this Agreement, and thereafter all distributions of cash (or, in the case of Section 11.8, other property) by the Company to the Members shall be made in Japanese Yen at the times and in the amounts determined by the Board of Executive Officers. Except as provided in Section 11.8, each distribution to the Members shall be made on a pro rata basis based upon the respective Percentages of the Members as of the date of such distribution.
- (b) Distribution for Taxes. Notwithstanding Section 6.2(a), subject to the Companies Act and other applicable law, the Company shall make, in respect of each Fiscal Year in which SanDisk or its Affiliates must recognize taxable income of the Company in SanDisk's tax returns, including, but not limited to, its US federal, state and local income (including withholding tax) and franchise tax returns, a distribution to SanDisk to the extent necessary to meet SanDisk's aggregate US tax liability with respect to such taxable income, with such liability calculated at the highest US, state and local corporate tax rates as may be then applicable to SanDisk. SanDisk will make a request upon the Company for such distribution as soon as is practicable after the filing of SanDisk Corporation's applicable US tax returns. Following receipt of such request, the Company shall make the requested distribution on the next date on which the Company is permitted to make distributions pursuant to the Companies Act. Simultaneously therewith, the Company shall also make a distribution to Toshiba in an amount equal to the amount of the per Interest distribution made to SanDisk pursuant to this Section 6.2(b). Any such prior distributions shall be taken into account upon any purchase and sale of Interests under Section 10 (Certain Agreements of the Members) or dissolution of the Company under Section 11 (Dissolution) hereof. If necessary, the Board of Executive Officers shall consider capital reductions to the extent that any such capital reduction will not adversely affect the Y5 Facility's operations.

6.3 No Interest. No interest shall be payable to the Members on their Capital Contributions or otherwise in respect of the capital of the Company.

6.4 Return of Capital Contributions. Except as expressly provided herein, no Member shall be entitled to the return of any part of such Member's Capital Contributions.

7. **Additional Contributions**

No Member shall be obligated under this Agreement or the Articles to contribute any additional amounts to the Company or otherwise to be liable for the debts and obligations of the Company.

8. **Accounting and Taxation**

8.1 Financial Accounting Conventions.

- (a) The Company shall adopt and follow Japanese GAAP.

- (b) Notwithstanding anything to the contrary in Appendix A, the first Fiscal Year shall begin on the date of formation of the Company and end on March 31, 2011.
- (c) The Company shall in principle (but subject to applicable Law) utilize a five-year straight line depreciation method for manufacturing equipment.

8.2 Maintenance of Books of Account. The Company shall keep or cause to be kept at its principal office, or such other location as the Board of Executive Officers shall designate, full and complete books of account. The books of account shall be maintained in a manner that provides sufficient assurance that transactions of the Company are recorded so as to comply with all applicable laws and to permit (a) the preparation of the Company's consolidated financial statements in accordance with Japanese GAAP and (b) the Members to account for their interest in the Company in accordance with Japanese GAAP.

8.3 Financial Statements.

- (a) Annual Statements. As soon as practicable following the end of each Fiscal Year (and in any event not later than fifty-two (52) days after the end of such Fiscal Year), the Company shall prepare and deliver to each Member and each Executive Officer, audited consolidated and consolidating balance sheets of the Company as of the end of such Fiscal Year and the related audited consolidated and consolidating statements of operations, the Members' capital accounts and cash flows of the Company for such Fiscal Year (or similar statements if such statements change as the result of changes in Japanese GAAP), together with appropriate notes to such consolidated financial statements, and in each case setting forth in comparative form the corresponding figures for the preceding Fiscal Year and for the budget for the Fiscal Year just completed. Such financial statements shall be accompanied by (i) the report of the Accountants to the effect that such financial statements (except for the comparison to the budget) have been prepared in conformity with Japanese GAAP (except as otherwise specified in such report) and that the audit of such financial statements has been performed in accordance with Japanese GAAP and (ii) a report as to all transactions (including the nature, type and amount) between the Company and each Member and their respective Affiliates. The Company shall conduct its business such that the report of the Accountants shall not contain any qualifications as to the scope of the audit or with respect to the Company's compliance with Japanese GAAP, except for changes in methods of accounting in which such Accountants concur and except that the foregoing shall not be deemed to obligate any Member to contribute any capital to the Company. The Company shall also provide SanDisk with an English version of such report, which shall contain sufficient data to enable SanDisk to prepare a reconciliation of the Company's financial reports from Japanese GAAP to United States GAAP. The Company shall deliver to SanDisk, at SanDisk's request and expense, any other financial information related to the Company that is reasonably requested by SanDisk for tax purposes, including, but not limited to, US Federal, state, and local income (including withholding tax) or franchise tax purposes.

- (b) Quarterly Statements.

- (i) As soon as practicable following the end of each Fiscal Quarter (and in any event not later than ten (10) days after the end of such Fiscal Quarter), the Company shall prepare and deliver to each Member and each Executive Officer unaudited consolidated and consolidating balance sheets of the Company as of the end of such Fiscal Quarter and the related unaudited consolidated and consolidating statements of operations, the Members' capital accounts and cash flows of the Company for such Fiscal Quarter and for the Fiscal Year to date (or similar

statements if such statements change as the result of changes in Japanese GAAP), in each case setting forth in comparative form the corresponding figures for the preceding Fiscal Quarter, for the corresponding Fiscal Quarter of the preceding Fiscal Year and for the budget for the Fiscal Quarter just completed and for the Fiscal Year to date.

- (ii) The financial statements for such Fiscal Quarter shall be accompanied by a certificate of the principal accounting or financial officer of the Company to the effect that such financial statements have been prepared under such officer's supervision and that, although such financial statements do not contain the footnotes and other disclosures required to be presented in interim financial statements by Japanese GAAP, such financial statements, in such officer's judgment, fairly present the financial condition and results of operations of the Company as of the date and for the periods indicated, subject to normal recurring year-end audit adjustments. The Company shall deliver to SanDisk, at SanDisk's request and expense and, except as otherwise provided herein, in the same manner as is delivered in connection with the Operating Agreement of Flash Alliance, Ltd. dated as of July 7, 2006, by and between Toshiba and SanDisk (Ireland) Ltd., any other financial information related to the Company (including an English translation thereof), that is reasonably requested by SanDisk for US financial reporting or Federal, state, and local income (including withholding tax) or franchise tax purposes.
 - (c) The Company shall obtain a professional tax audit from a qualified accountant complying with Japanese GAAP by May 22 of each year (including an English translation thereof). As part of its engagement of its auditors, the Company shall cause its auditors to provide such English language financial statements, audit reports, US GAAP reconciliations and consents as are required (or reasonably requested by SanDisk) in connection with SanDisk Corporation's filings with the United States Securities and Exchange Commission; *provided* that SanDisk shall pay for all the costs relating to such auditors' work. SanDisk may also request that the Company provide SanDisk with "comfort letters" in the manner customary for Japanese auditors in connection with public offerings in the United States, at SanDisk's own expense.
 - (d) Monthly Reports. Each month, the Company shall prepare and deliver to each Member and each Executive Officer the reports and other information set forth on Schedule 8.3. Such reports and other information will become available at the respective times set forth on Schedule 8.3.
 - (e) Business Plan. Subject to Sections 10.3(c), (e) and (f), and provided that the most recently approved Business Plan does not provide for the next Fiscal Year, the Company shall, not later than [***] prior to the commencement of each Fiscal Year, deliver to each Member a copy of the Business Plan, including the Company's monthly budgets, for the upcoming Fiscal Year, as approved by the Board of Executive Officers.
 - (f) Legal Proceedings. The Company shall promptly inform each Member and each Executive Officer with regard to litigation, governmental investigations, material government notices and threatened legal proceedings.
- 8.4 Other Reports and Inspection. The Company shall furnish promptly to each Member such other reports, financial data and information relating to the Company as such Member may reasonably request and shall require the Accountants to provide to each Member copies of any document related to the Company in the possession of the Accountants as such Member may reasonably request. The Company shall, upon

reasonable prior notice and during normal business hours, make available to each Member and their respective professional advisors, from time to time as requested by such Member, all properties, assets, books of account, corporate records, contracts and documentation, if any, relating to employee benefits of the Company, and any other material requested by such Member for inspection and, in the case of books of account, corporate records, contracts and documentation, if any, relating to employee benefits, copying, and shall use reasonable efforts to make available to such Member the Accountants and the key employees of the Company for interviews to verify any information furnished or to enable such Member otherwise to review the Company and its operations. The Company may condition such availability upon the entering into of reasonable and appropriate confidentiality agreements. Notwithstanding the foregoing, the Company will not make available to any Member information provided to the Company on a confidential basis by any other Member without the consent of such other Member.

- 8.5 Deposit of Funds. All funds of the Company and its Subsidiaries not otherwise employed shall be deposited from time to time to its credit in such banks, trust companies or other depositories, or invested in such other investments held as cash equivalents, as the Board of Executive Officers shall authorize. The funds of the Company and its Subsidiaries shall not be commingled with the funds of any Member or any of their respective Affiliates.

9. Share of Contribution; Disposition of Interests

9.1 Restrictions on Transfer of Interests.

- (a) No Member (nor any permitted transferees of any Member) may Transfer any interest in the Company, including any of such Member's Interests, to any Person, except by a Change of Control; provided, that any Member may Transfer all of its interest in the Company, including all of its Interests, subject to the Companies Act, to any one (1) of their respective Affiliates, with the prior written consent of every other Member, which consent shall not be unreasonably withheld; and provided, further, that (i) the transferee agrees in writing to become a party hereto and assumes all the obligations of the transferring Member hereunder and under each other FF Operative Document to which the transferring Member is a party (except to the extent the express terms of the Patent Indemnification Agreement condition its transferability on the consent of the non-transferring Member and such Member has not consented to Transfer thereof), and (ii) immediately after giving effect to such Transfer, no Event of Default or an event or condition that with the giving of notice or lapse of time or both would constitute an Event of Default with respect to the transferee Member shall exist. Following the effectiveness of any such Transfer, the transferring Member shall no longer have the transferred right, title or interest in the Company or any rights under this Agreement and the transferee shall be substituted as a Member for all purposes of this Agreement. The transferring Member shall, however, remain responsible for all obligations under this Agreement and the other FF Operative Documents for any transferee which is an Affiliate of the transferring Member and shall not be released or discharged from any existing liability or obligation to any Person. Any subsequent Transfer of an ownership interest in such Affiliate by the transferring Member shall be deemed to constitute a Transfer of Interests requiring compliance with this Section 9.1.
- (b) If a Member Transfers its entire interest in the Company pursuant to Section 9.1(a), the transferee shall succeed to all the rights and obligations of such Member under this Agreement.

- (c) Any Member may agree to pay amounts equal to distributions received by such Member from the Company to a third party in its sole discretion pursuant to a Permissible Assignment Agreement. “Permissible Assignment Agreement” means an agreement between a Member and another Person (the “Permissible Assignee”) which:
- (i) provides for the grant by such Member to the Permissible Assignee of the right to receive amounts equal to distributions received by such Member from the Company pursuant to Section 6 or 11 of this Agreement, but does not give the Permissible Assignee any Interests or any other rights whatsoever with respect to the Company;
 - (ii) provides that under no circumstances (including any Bankruptcy Event in respect of such Member) may any claim be made by the Permissible Assignee against the Company or any such Member or any Affiliate of any such Member or any of their respective assets, under or in connection with such agreement, even if such Member defaults in performance thereunder;
 - (iii) provides that the rights of the Permissible Assignee under such agreement may not be transferred without the prior written consent of each Member and that any such Transfer without such consents shall be null and void;
 - (iv) may not be amended, nor any provision thereof waived, in a manner that would cause it not to be a Permissible Assignment Agreement, without the prior written consent of the non-assigning Member;
 - (v) provides that the assigning Member is authorized to Transfer its entire interest in the Company pursuant to Section 9.1(a) free and clear of any interest of the Permissible Assignee and without any liability on the part of the transferee thereunder to the Permissible Assignee; and
 - (vi) contains an express acknowledgment by the Permissible Assignee, for the benefit of the non-assigning Member and the Company, to the effect of clauses (i)-(v) above.

The assigning Member shall ensure that any payment due to a Permissible Assignee pursuant to or in connection with a Permissible Assignment Agreement shall be made in full to such Permissible Assignee when due.

9.2 Admission of New Members. No Person shall have the right to become a Member unless and until all the following conditions are satisfied:

- (a) except in the case of a Transfer of all of a Member’s Interests of such Member in accordance with Section 9.1(a) (Restrictions on Transfer of Interests), such Person, the terms and conditions of such Person’s admission as a Member and the rights appurtenant to the Interests to be granted or Transferred, as applicable, to such Person are approved by all existing Members and, if applicable, the creation of any new class or group of Interests in the Company having different rights, powers and duties is reflected in amendments to the Articles and to this Agreement;
- (b) such Person executes a counterpart of this Agreement and such other instrument or instruments as the Company and a non-transferring Member may reasonably deem appropriate to affirm that the representations and warranties contained in the Master Agreement are true and correct with respect to such Person and that such Person agrees to

be bound as a Member by this Agreement and all of the covenants and agreements herein; and

- (c) if requested by the Company, an opinion of counsel, a purchaser representation letter or other appropriate documentation is furnished to the Company establishing that the grant or Transfer, as applicable, of Interests to the new Member will comply with the Companies Act.

Except to the extent required by law, the Company shall have no obligation to recognize or to furnish information or make distributions to any new Member or any transferee of a Member who does not become a Member in accordance with Section 9.1 (Restrictions on Transfer of Interests) or this Section 9.2.

- 9.3 Withdrawal Prohibited. Except as otherwise expressly permitted by this Agreement or the Master Agreement, (i) no Member may withdraw from the Company and (ii) no Member may effect or cause a termination or dissolution of the Company without the prior written consent of all other Members (which consent may be withheld in such other Member's sole discretion).

- 9.4 Purchase of Additional Interest. At any time during the term of this Agreement and so long as SanDisk is a Member, SanDisk shall have the right to purchase from Toshiba 0.1% of the total Interests then outstanding in the event that (i) Toshiba's patent umbrella does not adequately protect the Company or (ii) dissolution of the Company is commenced pursuant to Section 11 hereof. The purchase price of such Interests shall equal [***] as of the date of such transaction.

10. Certain Agreements of the Members

- 10.1 Taxes and Charges; Governmental Rules. Each Member and the Company shall (a) promptly pay all applicable Taxes and other governmental charges imposed against such Member and the Company except to the extent any such Taxes or other charges are being contested in good faith by appropriate proceedings and (b) comply with all applicable Governmental Rules, in each case except to the extent that nonpayment or noncompliance will not have a material adverse effect on the Company.
- 10.2 Further Assurances. Following the Closing, each Member shall, and shall cause its Affiliates and the Company to take all reasonable actions necessary or appropriate to effectuate the transactions contemplated by this Agreement, and to obtain (and cooperate with the other Member in obtaining) any Governmental Action or third party consent required to be obtained or made by it in connection with the transactions contemplated by this Agreement; provided, that no Burdensome Condition shall be made to exist with respect to such Member or any of its Affiliates in connection therewith.
- 10.3 Dispute Resolution; Deadlock.
- (a) The Members shall endeavor to settle, through their respective designees to the Board of Executive Officers, any disputes which may arise between them, including without limitation, failure by the Board of Executive Officers to reach agreement (or failure to take a vote) on any matter requiring Executive Officers approval pursuant to Section 5.1(d) (Matters Requiring the Approval of the Board of Executive Officers). The Members shall attempt to resolve the issue or proposed action in question, to the extent practicable, in a manner consistent with the Company's most recently approved Business Plan, unless the issue in dispute is the adoption of a new Business Plan, in which case,

except as provided for in Section 6.3 of the Master Agreement, the provisions of Sections 10.3(c), (e) and (f) shall apply.

- (b) If (i) the Members are unable to agree on any matter requiring the approval of the Members pursuant to Section 4.1(a) (Matters Requiring the Approval of the Members), (ii) the Board of Executive Officers is unable to agree on any matter requiring the approval of the Board of Executive Officers pursuant to Section 5.1(d) (Matters Requiring the Approval of the Board of Executive Officers) (other than the approval of any Business Plan, with respect to which the failure to agree shall be governed by Sections 10.3(c), (e) and (f)) or (iii) the Members or the Board of Executive Officers are otherwise unable to resolve a dispute on any other item (other than the approval of any Business Plan, with respect to which the failure to agree shall be governed by Sections 10.3(c), (e) and (f)), then any Member may bring the matter to the attention of the General Manager Memory Division, Semiconductor Company of Toshiba, and the Chief Operating Officer of SanDisk (the “Designated Individuals”), who will attempt to find a resolution. If the matter has not been resolved within thirty (30) days of referral to the Designated Individuals, the matter will be referred to the Management Representatives for a final decision, which decision will be final and binding on the Company and the Members with respect to any matter specified in Sections 10.3(b)(i) and (ii) above. If an agreement is reached by the Management Representatives, the mutually agreed resolution shall be implemented by the Company. Should no solution be agreed upon within thirty (30) days after submission of the matter to the Management Representatives with respect to the matters specified in (iii) above, such matter shall be submitted to arbitration in accordance with Section 2.5 of the Appendix A. Should no solution be agreed upon within sixty (60) days after submission of the matter to the Management Representatives with respect to the matters specified in Sections 10.3(b)(i) and (ii) above, then the action for which approval was requested will not occur, unless it is already included in the most recently approved Business Plan, subject to Section 6.5 of the Master Agreement.
- (c) Except as provided below and subject to Section 6.3 of the Master Agreement, if by [***] of any calendar year during the term of this Agreement, commencing [***], the Board of Executive Officers and the Members have not approved and agreed upon a Business Plan for the upcoming Fiscal Year, then any Member may refer the dispute to the Management Representatives for a decision, which decision shall be final and binding on the Company and the Members. If a decision is reached by agreement of the Management Representatives, such decision shall be implemented by the Company. Should no decision be reached within ninety (90) days after submission of the matter to the Management Representatives, and unless the Members have agreed to continue operations under the most recently approved Business Plan until a new Business Plan is approved, then within ten (10) Business Days thereafter any Member may elect by written notice to all other Members to declare a deadlock (“Deadlock”), except with respect to any issue where the Master Agreement expressly prohibits declaration of a Deadlock.
- (d) If demand for both Members’ NAND Flash Memory Products is significantly below expectations, they shall address the matter as contemplated in Section 6.6(b)(ii) of the Master Agreement.
- (e) Within thirty (30) days after a Member has notified the other Member of a Deadlock, either Member (the “Initiating Member”) may submit to the other Member (the “Responding Member”) a written irrevocable notice (the “Deadlock Dissolution Notice”) to the effect that the Initiating Member offers to sell to the Responding Member or its designee the Initiating Member’s Interests for a cash payment, by wire transfer of

immediately available Japanese Yen, in an amount equal to the [***] as of the date of such transaction multiplied by the Initiating Member's Percentage as of such date.

- (f) The Responding Member may accept such offer by written response to the Initiating Member within forty-five (45) days of receipt of the Deadlock Dissolution Notice indicating that the Responding Member elects to purchase the Interests of the Initiating Member. If the Responding Member declines to exercise its right to purchase the Interests of the Initiating Member pursuant to this Section 10.3 or fails to respond to such Deadlock Dissolution Notice (or if both Members submit Deadlock Dissolution Notices), the Company shall be dissolved pursuant to Section 11.1(d) (Events of Dissolution), at the end of a one-year period for the wind-down of operations commencing with the receipt of the Deadlock Dissolution Notice by the Responding Member. During such one-year period, the Company's business shall be conducted in accordance with the most recently approved Business Plan except that additional capital expenditures will not be made except as required for line maintenance.

10.4 Remedies Upon Event of Default; Termination on Breach. If there has occurred and is continuing an Event of Default with respect to a Member (upon such occurrence, such Member is referred to herein as the "Defaulting Member") in addition to all other remedies available to the Company or the other Member (the "Nondefaulting Member"), whether under any of the FF Operative Documents or other agreements or by law, the Nondefaulting Member shall have the option to take one or more of the following actions:

- (a) give written notice to the Defaulting Member of its intention to acquire all of the Interests of the Defaulting Member for a cash payment, by wire transfer of immediately available Japanese Yen, in an amount equal to the [***] as of the date of such transaction multiplied by the Defaulting Member's Percentage as of such date; and/or
- (b) elect to dissolve the Company pursuant to Section 11.3 (Dissolution Upon Event of Default), in which case the affairs of the Company shall be wound up and the Company shall be dissolved in accordance with Section 11 (Dissolution).

10.5 Mechanics of Sale.

- (a) The closing of any purchase and sale of Interests pursuant to Section 10.3 (Dispute Resolution; Deadlock), 10.4 (Remedies Upon Event of Default; Termination on Breach) or 11.5 (Dissolution Upon Notice) shall take place not later than the thirtieth (30th) Business Day after notice of the purchase is given, as the case may be, except that such period shall be extended as necessary in order to comply with any Governmental Rule. The purchasing Member shall pay for the Interests being acquired by wire transfer of immediately available funds in Japanese Yen to an account specified by the selling Member. The selling Member shall execute all documents necessary to effect the conveyance of its Interests, free and clear of all Liens, to the purchasing Member. In addition, the Members shall enter into an indemnity and release agreement, in a form reasonably satisfactory to each Member, indemnifying and holding harmless the selling Member and its Affiliates for liabilities or claims made after the date of the purchase and sale under any guarantees or other agreements supporting the obligations of the Company which may have been extended by the selling Member or any of its Affiliates. The Members shall also reach agreement on a reasonable transition plan of up to six (6) months in connection with services provided to the Company by members of the SanDisk Team assigned to the Company by the Selling Member.

- (b) If a Member elects to acquire all of the Interests of the other Member pursuant to Section 10.3 (Dispute Resolution; Deadlock), 10.4 (Remedies Upon Event of Default; Termination on Breach) or 11.5 (Dissolution Upon Notice), such Member shall be obligated to take all actions required of it to consummate the applicable purchase and sale on the date determined pursuant to this Section 10.5 (Mechanics of Sale). If any Member has the right to purchase the Interests of any other Member, such Member shall have the right to assign such right to purchase to any other Person.

11. Dissolution

11.1 Events of Dissolution. The Company shall be dissolved and shall commence winding up its affairs upon the first to occur of the following. The Members shall cooperate in taking any necessary corporate steps under the Companies Act to attain the purpose of this Section 11:

- (a) the expiration of the term of the Company pursuant to Section 2.4 (Term; Extension);
- (b) the agreement of the Members to dissolve the Company pursuant to Section 11.2 (Dissolution by Agreement);
- (c) the election of the Nondefaulting Member pursuant to Section 11.3 (Dissolution Upon Event of Default);
- (d) the first anniversary of the receipt by either Member of a Deadlock Dissolution Notice submitted with respect to a failure of the Members to approve and agree upon a Business Plan pursuant to Section 10.3 (Dispute Resolution; Deadlock) if either (i) the Responding Member declines to exercise its right to purchase the Interests of the Initiating Member or fails to respond to such Deadlock Dissolution Notice, or (ii) both Members submit Deadlock Dissolution Notices with respect to such failure to agree;
- (e) [Intentionally omitted.]
- (f) the bankruptcy, dissolution, expulsion or incapacity of a Member or the occurrence of any other event which terminates the membership of a Member in the Company ("Bankruptcy Event"); or
- (g) the election of the Notifying Party to dissolve the Company pursuant to Section 11.5 (Dissolution Upon Notice) unless the Notified Party elects to purchase the Interests of the Notifying Party pursuant to Section 11.5 (Dissolution Upon Notice).

11.2 Dissolution by Agreement. The Company may be dissolved at any time by the unanimous written consent of the Members.

11.3 Dissolution Upon Event of Default. During the occurrence and continuation of an Event of Default (other than a Bankruptcy Event) with respect to a Member, the Nondefaulting Member may elect, by written notice to the Defaulting Member, to dissolve the Company, in which event the Company shall be dissolved and the Members shall take all actions necessary to wind up the affairs of the Company in accordance with Section 11.7 (Winding Up). This Section 11.3 shall not be construed to limit the rights of the Nondefaulting Member under Section 10.4 (Remedies Upon Event of Default) or to seek damages from the Defaulting Member or any other Person for the breach of its obligations under any of the FF Operative Documents.

11.4 [Intentionally omitted.]

11.5 Dissolution upon Notice. At any time between April 1, 2017 and March 31, 2018, any Member (the “Notifying Party”) may elect, by giving notice to all other Members (the “Notified Party”), to dissolve the Company, in which event the Company will be dissolved and, within the one (1) year period following the giving of such notice, the Members shall mutually agree upon a plan for winding up the affairs of the Company in accordance with Section 11.7 (Winding Up), unless the Notified Party, directly or through any of its Affiliates, elects in writing within three (3) months of receiving such notice, to purchase from the Notifying Party all of its Interests for a cash payment, by wire transfer of immediately available Japanese Yen, in an amount equal to the [***] as of the date of such transaction multiplied by the Notifying Party’s Percentage as of such date.

11.6 Financing Defaults.

- (a) If pursuant to Section 6.3(a)(i) of the Master Agreement either Party, as the Investing Party, exercises its election to terminate this Agreement, the Members shall cooperate in good faith to effect the purchase by Toshiba (or its designated Affiliate) and sale by SanDisk of all of SanDisk’s Interests, at a price equal to SanDisk’s percentage Interest of the outstanding Interests in the Company multiplied by the [***] as of the date such transaction is closed (with estimated [***] as agreed by the Members in good faith paid on the closing of such transaction and any true-up payment made by the appropriate Party promptly after determination of the actual [***] as of the closing of such purchase and sale transaction).
- (b) [***]
- (c) If pursuant to Section 6.12(d)(ii) of the Master Agreement either Party, as the Non-Defaulting Party, exercises its election to terminate this Agreement, the Non-Defaulting Party shall have the same rights as provided in Section 11.6(a) and the Members shall cooperate in good faith to effect the purchase by the Non-Defaulting Party (or its designated Affiliate) and sale by the Defaulting Party of all of the Defaulting Party’s Interests.

11.7 Winding Up.

- (a) Upon the dissolution of the Company, the Members shall proceed as promptly as practicable to (i) wind-up the affairs of the Company and cause the Company to satisfy the Company’s liabilities, (ii) dispose of the Company’s assets as quickly as possible consistent with obtaining the full fair market value of the Company, preferably, to the extent it is commercially practicable to do so, by selling the Company as a going concern (provided, however, no Member shall be under any obligation to extend the terms of any FF Operative Document or to offer to enter into any other agreement with a prospective purchaser of the Company for the purchase or sale of goods or services or the use of facilities or any other business arrangement), and (iii) distribute any net proceeds to the Members in accordance with Section 11.8 hereof and applicable Law. In connection with a sale of the Company’s assets under clause (ii), each Member or any of their respective Affiliates shall have a right of first offer to acquire the Company’s tangible personal property in the liquidation process and may also acquire such property through participation at auction except in the event of a dissolution pursuant to Section 11.3 (Dissolution Upon Event of Default), in which event the Defaulting Member and its Affiliates shall not have such right of first offer to acquire the Company’s tangible personal property. Each of the Members shall be furnished with a statement setting forth the assets and liabilities of the Company as of the date of the complete liquidation of the

Company. The Accountants shall review the final accounting and shall render their opinion with respect thereto.

- (b) During the period of winding-up, the Company shall continue to operate and all the provisions of this Agreement shall remain in effect, except as otherwise expressly provided herein. The Company shall notify all known creditors and claimants of the dissolution of the Company in accordance with applicable law.

11.8 Liquidation Proceeds.

- (a) In the case of the dissolution and liquidation of the Company, the Company may make a distribution in kind. Any cash and all distributions in kind that are to be distributed shall be distributed to the Members, on a pro rata basis based upon the respective Percentages of the Members as of the date of such distribution.
- (b) Unless otherwise agreed by the Members, and to the extent permitted under any agreements with third parties, all assets to be distributed upon the dissolution and liquidation of the Company shall be distributed as follows:
 - (i) first, to creditors, including Members who are creditors, to the extent permitted by law, in satisfaction of liabilities of the Company, other than for distributions to Members pursuant to Section 6.2 (Distributions); and
 - (ii) second, to the Members on a pro rata basis based upon the respective Percentages of the Members as of the date of such distribution.

For purposes of this Section 11.8, instruments of transfer and other documents reasonably requested by the distributee shall be executed by the Company or the other Member, or both.

- (c) Any distribution made pursuant to this Section 11.8 shall be made as soon as practicable under and in accordance with applicable Japanese law.

12. **Indemnification and Insurance**

12.1 Indemnification.

- (a) Subject to Section 12.1(c), the Company shall indemnify each Person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (including an action by or in the right of a Member or the Company), by reason of the fact that such Person is or was a Member or is or was or has agreed to become an Executive Officer or is or was serving or has agreed to serve at the request of the Company as an Executive Officer, officer, employee or agent of the Company or of another partnership, corporation, joint venture, trust or other enterprise, arising from any action alleged to have been taken in any such capacity or by reason of any liability or obligation of the Company, against any and all losses, damages, liabilities, costs, charges, expenses (including interest, penalties and reasonable attorneys' fees and expenses), judgments, fines and amounts paid in settlement (collectively, "Losses") actually and reasonably incurred by him or on his behalf in connection with such action, suit or proceeding and any appeal therefrom. Without limiting the generality of the foregoing, any of such Losses shall be deemed to arise out of a Company liability or obligation if it arises out of or is based upon the conduct of the business of the Company (or any of its Subsidiaries) or the ownership of the property of the Company (or any of its Subsidiaries).

- (b) The indemnification provided under this Section 12.1 shall inure to the benefit of the successors, heirs and personal representatives of any Person entitled to the benefit of such indemnification. Such indemnification shall be a contract right and shall include the right to be paid advances of reasonable expenses incurred by any such Person in connection with such action, suit or proceeding.
 - (c) The indemnification provided under this Section 12.1 shall not inure to the benefit of any Person in respect of Losses to the extent that such Losses (i) arise out of or are based upon the gross negligence or willful misconduct of such Person or (ii) constitute a tax, levy or similar governmental charge not imposed upon the Company (or any of its Subsidiaries) or on their respective properties. The indemnification provided under this Section 12.1 shall also not be available to any Person in respect of any Losses if a judgment or other final adjudication adverse to such Person establishes (x) that such Person's acts were committed in bad faith or were the result of active and deliberate dishonesty and were material to the cause of action so adjudicated or (y) that such Person gained in fact a financial profit or other advantage to which such Person was not legally entitled. It is understood and agreed that, for the purposes of this Section 12.1, Losses shall be deemed not to arise out of or be based upon the gross negligence or willful misconduct of a Person solely because it arises out of or is based upon the gross negligence, willful misconduct, bad faith or active and deliberate dishonesty of an Executive Officer, officer or employee of such Person if at the time of such gross negligence, willful misconduct, bad faith or active and deliberate dishonesty, such Executive Officer, officer or employee was also a member of the SanDisk Team or an Executive Officer acting in his capacity as such.
 - (d) The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent shall not, of itself, create a presumption that the indemnified Person did not meet the standard set forth in Section 12.1(c) (Indemnification).
- 12.2 Insurance. The Company may, to the fullest extent permitted by law, purchase and maintain insurance against any liability that may be asserted against any Person entitled to indemnity pursuant to Section 12.1.
- 12.3 Indemnification by the Members.
- (a) Each Member agrees to, and does hereby, indemnify and hold harmless the Company and the other Member from and against any and all Losses arising out of, or based upon, the gross negligence or willful misconduct of such Member under this Agreement or such Member exceeding its authority under this Agreement.
 - (b) The provisions of this Section 12.3 shall survive each of the termination of this Agreement, the dissolution of the Company and the withdrawal of any Member.
- 12.4 Assertion of Claims.
- (a) In the event that a Person (the "Indemnified Party") desires to assert its right to indemnification from a Person (an "Indemnifying Party") required to indemnify such Indemnified Party under this Section 12, the Indemnified Party will give the Indemnifying Party prompt notice of the claim giving rise thereto (a "Claim"), and the Indemnifying Party shall undertake the defense thereof (unless the Claim is asserted against or related to or results from any action or failure to take action by such Indemnifying Party). The failure to promptly notify the Indemnifying Party hereunder

shall not relieve the Indemnifying Party of its obligations hereunder, except to the extent that the Indemnifying Party is actually prejudiced by the failure to so notify promptly.

- (b) The Indemnified Party shall not settle or compromise any Claim without the written consent of the Indemnifying Party unless the Indemnified Party agrees in writing to forego any and all claims for indemnification from the Indemnifying Party with respect to such Claim. However, if the Indemnifying Party, within a reasonable time after notice of any such Claim, fails to defend such Claim, the Indemnified Party shall have the right to undertake the defense, compromise or settlement of such Claim on behalf of and for the account and risk of the Indemnifying Party, subject to the right of the Indemnifying Party to assume the defense of such Claim at any time prior to settlement, compromise or final determination thereof.
- (c) IF THE INDEMNIFYING PARTY HAS UNDERTAKEN THE DEFENSE OF A CLAIM AND (I) IF THERE IS A REASONABLE EXPECTATION THAT (X) A CLAIM MAY MATERIALLY AND ADVERSELY AFFECT THE INDEMNIFIED PARTY OTHER THAN AS A RESULT OF MONEY DAMAGES OR OTHER MONEY PAYMENTS OR (Y) THE INDEMNIFIED PARTY OR MEMBERS MAY HAVE LEGAL DEFENSES AVAILABLE TO IT OR THEM THAT ARE DIFFERENT FROM OR ADDITIONAL TO THE DEFENSES AVAILABLE TO THE INDEMNIFYING PARTY, OR (II) IF THE INDEMNIFYING PARTY SHALL NOT HAVE EMPLOYED COUNSEL REASONABLY SATISFACTORY TO THE INDEMNIFIED PARTY, THE INDEMNIFIED PARTY SHALL NEVERTHELESS HAVE THE RIGHT, AT THE INDEMNIFYING PARTY'S COST AND EXPENSE, TO DEFEND SUCH CLAIM.

13. Miscellaneous

- 13.1 Governing Law. Notwithstanding anything to the contrary in Appendix A, this Agreement shall in all respects be governed by and construed in accordance with the laws of Japan, without regard to the conflict of laws principles.
- 13.2 Effectiveness. This Agreement shall be effective as of the date first written above and shall remain in effect until the Termination Date. Sections 1, 7, 11.7, 11.8 and 13 shall survive the termination of this Agreement.

IN WITNESS WHEREOF, this Agreement has been executed and delivered each party as of the date first above written.

TOSHIBA CORPORATION

By: /s/ Kiyoshi Kobayashi

Name: Kiyoshi Kobayashi

Title: President and CEO
Semiconductor Company
Corporate Senior Vice President

SANDISK FLASH B.V.

By: /s/ Sanjay Mehrotra

Name: Sanjay Mehrotra

Title: Director

[Signature Page to Flash Forward Operating Agreement]

Schedule 5.3

Management and Operating Reports

[***]

Schedule 6.1
Capital Contributions

[***]

Schedule 8.3

Monthly Reports

[***]

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 HAS BEEN IDENTIFIED IN THIS DOCUMENT WITH A PLACEHOLDER IDENTIFIED BY THE MARK “[***]”.

Execution Version

FFL COMMITMENT AND EXTENSION AGREEMENT

This FFL COMMITMENT AND EXTENSION AGREEMENT (this “Agreement”) is made as of December 12, 2017, by and among Toshiba Memory Corporation, a Japanese corporation (“TMC”), Western Digital Corporation, a Delaware corporation (“WD”), SanDisk LLC, a Delaware limited liability company (“SanDisk”) and SanDisk Flash B.V., a company organized under the laws of the Netherlands (“SanDisk BV”) and, together with WD, SanDisk and TMC, the “Parties”).

WHEREAS, Toshiba Corporation (“Toshiba”), SanDisk and SanDisk B.V. entered into that certain Flash Forward Master Agreement on July 13, 2010 (as amended, the “FF Master Agreement”), and the other FF Operative Documents, which collectively provide for the management and operation of Flash Forward Limited, a Japanese *godo kaisha* (“Flash Forward”) and which by their terms are set to expire as of December 31, 2025;

WHEREAS, on May 12, 2016, SanDisk Corporation, together with its Subsidiaries, became wholly owned indirect Subsidiaries of WD and SanDisk Corporation subsequently converted from a Delaware corporation to a Delaware limited liability company that is now known as SanDisk LLC;

WHEREAS, on even date herewith, WD, Toshiba, and TMC entered into the Parent Guarantee and Undertaking as to Collaboration, which sets forth, among other things, certain rights and obligations of the parties thereto with respect to WD’s participation in activities related to the Collaboration (as defined therein), including those contemplated by the FF Operative Documents;

WHEREAS, Toshiba and TMC claim that, effective as of April 1, 2017, Toshiba completed a corporate demerger by operation of law that transferred to TMC, Toshiba’s wholly-owned Subsidiary, substantially all of the assets and liabilities of Toshiba’s memory business, and that TMC has assumed Toshiba’s position as a party to the FF Operative Documents;

WHEREAS, following the execution of the Confidential Settlement and Mutual Release Agreement, dated as of even date herewith, by and among the Toshiba, TMC, WD, SanDisk, and certain of SanDisk’s Subsidiaries, Toshiba intends to transfer certain other assets and liabilities related to Toshiba’s memory business to TMC, including Toshiba’s equity ownership interests in Flash Forward; and

WHEREAS, the Parties desire to extend the term of Flash Forward, the FF Master Agreement and the other FF Operative Documents, and to specify the terms and conditions on which such extension is hereby agreed;

NOW, THEREFORE, on the terms and subject to the conditions and limitations set forth in this Agreement, with reference to Section 2.1 of Appendix A to the FF Operative Documents and Section 2.4 of the FF Operating Agreement, the Parties hereby agree as follows:

1. RELATION TO FF OPERATIVE DOCUMENTS

1.1 Application of Appendix A. Appendix A to the FF Operative Documents, as amended by this Agreement (“Appendix A”), shall apply to this Agreement. The capitalized terms used but not defined in this Agreement shall have the respective meanings assigned to them in Appendix A (or, if not defined in Appendix A, the respective meanings assigned to them in the FF Master Agreement) and the rules of construction and documentary conventions set forth in Appendix A shall apply to this Agreement as if set forth herein.

1.2 Effect of this Agreement. Except as expressly set forth in this Agreement, the FF Operative Documents shall be unaffected by this Agreement, and this Agreement shall be governed by and subject to the terms of the FF Operative Documents as amended hereby. From and after the date of this Agreement, each reference in any FF Operative Document to “this Agreement,” “hereof,” “hereunder” or words of like import, and all references to such FF Operative Document in any and all agreements, instruments, documents, notes, certificates and other writings of every kind of nature (other than in this Agreement or as otherwise expressly provided) shall be deemed to mean such FF Operative Document, as amended by and giving effect to this Agreement, whether or not such amendment is expressly referenced.

1.3 Addition to FF Operative Documents. This Agreement shall be deemed to be an FF Operative Document and the definition of “FF Operative Documents” as set forth in Appendix A is hereby amended so as to include this Agreement.

2. EXTENSION

2.1 FFL Term Extended. Section 2.4 (“Term; Extension”) of the FF Operating Agreement is hereby amended and restated in its entirety as follows:

“Term; Extension. The Company shall be terminated on December 31, 2027, unless extended by mutual written agreement of all the Members or earlier terminated in accordance with Section 11 (Dissolution). Any such extension shall be effective only upon the written agreement of all of the Members and shall be on such terms and for such period as set forth in such agreement. The Members agree to meet, no later than December 31, 2026, to discuss the possible extension of the term of the Company.”

2.2 Flash Forward Articles of Incorporation. Promptly following the date hereof, the Parties shall cause Article 4 of the Articles of Incorporation of Flash Forward to be amended to extend the term of Flash Forward to December 31, 2027.

3. OTHER COVENANTS AND AMENDMENTS

3.1 Material Breach. Section 9.1 (“Termination”) of the FF Master Agreement is hereby amended to add the following provision as a new Section 9.1(l) thereof:

“(l) The Parties agree and acknowledge that in the event of a final determination by an arbitral tribunal under Section 2.5 of Appendix A that a Party has committed or is

committing a continuing material breach of any of [***] of this Agreement that would reasonably be expected to cause material damage to Flash Forward or the non-breaching Party (any such breach, a “Material Breach”), and the breaching Party fails to cure such breach within [***] after such determination, then the non-breaching Party shall have as a remedy for Material Breach the termination of Flash Forward and of this Agreement and the FF Operative Documents, in addition to all other legal and equitable remedies available to such Party. Notwithstanding anything to the contrary in Appendix A, any such termination shall constitute an “Event of Default” of the breaching Party for all purposes of this Agreement and of that certain FFL Commitment and Extension Agreement dated as of December 12, 2017.

In the event that a Party asserts a Material Breach in a written notice to the other Party, the dispute shall proceed as specified in Section 2.5 of Appendix A, provided, however, that

(i) 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;

(ii) the Parties shall use their respective reasonable best efforts to complete and finalize the Terms of Reference within [***] following such assertion of Material Breach; and

(iii) the Parties shall instruct the arbitral tribunal, with the full assistance and cooperation of the Parties, to endeavor to submit its draft award on the existence of the Material Breach to the Court of Arbitration of the ICC 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 award.

The Parties agree to attempt in good faith to resolve any potential claim for Material Breach.”

3.2 Restructuring Costs. Section 9.1(j) of the FF Master Agreement is hereby amended and restated in its entirety as follows:

“In connection with any termination of Flash Forward, the FF Master Agreement and/or the FF Operating Agreement:

(i) the Parties shall exercise their respective reasonable best efforts to plan such termination in advance with the goal of minimizing related costs;

(ii) with respect to employees of TMC and employees of WD or any of its Subsidiaries working at the Y5 Facility, (A) in the case of those that are employees of TMC, TMC shall use its reasonable best efforts to retrain or relocate such individuals to other TMC facilities, and (B) in the case of those that are employees of WD or any of its Subsidiaries, WD shall use its reasonable best efforts to retrain or relocate such individuals to other WD facilities, in each case to the maximum extent possible;

(iii) [***]; and

(iv) [***].

(v) [***].

3.3 Consequences of Deadlock Termination. Section 9.1(f)(i) of the FF Master Agreement is hereby amended and restated in its entirety as follows:

“ (i) there shall be no capacity ramp-down rights or obligations,”.

4. MISCELLANEOUS

4.1 Term. This Agreement shall continue in full force and effect until the latest of (a) the termination of the FF Master Agreement, (b) the completion of the dissolution, liquidation and winding up of Flash Forward, and (c) the date on which a single Party owns all of the Interests.

4.2 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.

4.3 Further Assurances. Each Party shall from time to time, and shall cause its Affiliates who are party to any FF Operative Document from time to time to, at the reasonable request of the other Parties, and without further consideration (unless otherwise provided for under the FF Operative Documents), execute and deliver such instruments, cooperate and take any other actions as may be reasonably necessary to effectuate (i) the provisions of this Agreement and (ii) the transactions contemplated herein.

4.4 Other Terms. Further to Section 1.1 above, the general, miscellaneous, interpretive, non-disclosure and other terms and conditions provided in Appendix A shall apply to this Agreement as if set forth herein.

4.5 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/ Michael C. Ray
Name: Michael C. Ray
Title: Executive Vice President, Chief Legal
Officer and Secretary

TOSHIBA MEMORY CORPORATION

By: /s/ Yasuo Naruke
Name: Yasuo Naruke
Title: President and Chief Executive
Officer

SANDISK LLC

By: /s/ Michael C. Ray
Name: Michael C. Ray
Title: Sole Manager

SANDISK FLASH B.V.

By: /s/ Michael C. Ray
Name: Michael C. Ray
Title: Director

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 HAS BEEN IDENTIFIED IN THIS DOCUMENT WITH A PLACEHOLDER IDENTIFIED BY THE MARK “[***]”.

Execution Version

FFL SECOND COMMITMENT AND EXTENSION AGREEMENT

This FFL SECOND COMMITMENT AND EXTENSION 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”), 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 together 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 together with FPL and FAL, the “JVs,” and collectively with TMC, TMI, WD, SanDisk, FPL, FAL and FFL, the “Parties”).

WHEREAS, TMC, SanDisk LLC and SanDisk Flash are parties to that certain Flash Forward Master Agreement dated July 13, 2010 (as amended from time to time, the “FF Master Agreement”), and the other FF Operative Documents, which collectively provide for the management and operation of FFL and which by their terms are set to expire as of December 31, 2025;

WHEREAS, the Parties entered into the FFL Commitment and Extension Agreement (the “Extension Agreement”) on December 12, 2017, with respect to FFL;

WHEREAS, the Parties, among others, are engaged in the joint development and manufacture of BiCS Products and NAND Flash Memory Products;

WHEREAS, some or all of the Parties, among others, are concurrently entering into this Agreement, the K1 Facility Agreement, dated May 15, 2019, by and among TMC, TMI, WD, SanDisk and the JVs (the “K1 Facility Agreement”), and the other New Agreements (as defined in the K1 Facility Agreement);

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

WHEREAS, the Parties intend to restructure the JV operations such that FFL will wind down its activities at the Yokkaichi Facility and FFL will be the Parent Parties’ primary vehicle for joint investments in tools for the Kitakami Facility, and, from the date hereof, FPL and FAL will be the Parent Parties’ primary vehicles for joint investments in tools for the Yokkaichi Facility and such investments by FPL and FAL for the Y5 Facility will be on substantially the same terms and conditions that apply to FFL’s investments in tools for the Y5 Facility immediately prior to giving effect to the transactions contemplated by this Agreement;

WHEREAS, in connection with such restructuring of the JV operations, the Parties desire to make certain amendments to the Master Operative Documents as described herein;

WHEREAS, in reliance on the other Parties' commitment to complete such restructuring of the JV operations, and to finalize and enter into such amendments, each Party desires to further extend the term of FFL, the FF Master Agreement and the other FF Operative Documents, to December 31, 2034 and to specify the terms and conditions on which such extension is hereby agreed;

NOW, THEREFORE, on the terms and subject to the conditions and limitations set forth in this Agreement, with reference to Section 2.1 of Appendix A to the FF Operative Documents and Section 2.4 of the FF Operating Agreement, the Parties hereby agree as follows:

1. RELATION TO FF OPERATIVE DOCUMENTS

1.1 Application of Appendix A. Appendix A to the FF Operative Documents, as amended by this Agreement ("Appendix A"), shall apply to this Agreement. The capitalized terms used but not defined in this Agreement shall have the respective meanings assigned to them in the K1 Facility Agreement (or, if not defined in the K1 Facility Agreement, the respective meanings assigned to them in Appendix A, and if not defined in Appendix A, the respective meanings assigned to them in the FF Master Agreement) and the rules of construction and documentary conventions set forth in Appendix A shall apply to this Agreement as if set forth herein.

1.2 Effect of this Agreement. Except as expressly set forth in this Agreement, the FF Operative Documents shall be unaffected by this Agreement, and this Agreement shall be governed by and subject to the terms of the FF Operative Documents as amended hereby. From and after the date of this Agreement, each reference in any FF Operative Document to "this Agreement," "hereof," "hereunder" or words of like import, and all references to such FF Operative Document in any and all agreements, instruments, documents, notes, certificates and other writings of every kind of nature (other than in this Agreement or as otherwise expressly provided) shall be deemed to mean such FF Operative Document, as amended by and giving effect to this Agreement, whether or not such amendment is expressly referenced.

1.3 Addition to FF Operative Documents. This Agreement shall be deemed to be an FF Operative Document and the definition of "FF Operative Documents" as set forth in Appendix A is hereby amended so as to include this Agreement.

2. EXTENSION

2.1 FFL Term Extended. Section 2.4 ("Term; Extension") of the FF Operating Agreement is hereby amended and restated in its entirety as follows:

"Term; Extension. The Company shall be terminated on December 31, 2034, unless extended by mutual written agreement of all the Members or earlier terminated in accordance with Section 11 (Dissolution). Any such extension shall be effective only upon the written agreement of all of the Members and shall be on such terms and for such period as set forth in such agreement. The Members agree to meet, no later than December 31, 2033, to discuss the possible extension of the term of the Company."

2.2 FFL Articles of Incorporation. Promptly following the date hereof, the Parties shall cause the Articles of Incorporation of FFL to be amended to extend the term of FFL to December 31, 2034.

3. RESTRUCTURING OF JV OPERATIONS

3.1 FFL as Primary Investment Vehicle. From the date hereof, FPL and FAL shall be the Parent Parties' primary vehicles for joint investments in tools for the Yokkaichi Facility, and the Parties shall, to the maximum extent feasible, cause investments for BiCS Expansions, BiCS Conversions, and BiCS Technology Transitions of JV Products at the Yokkaichi Facility to be made solely through FPL or FAL, other than with respect to BiCS Conversions and BiCS Technology Transitions of FFL's then-existing JV Capacity at the Yokkaichi Facility prior to the Cessation Date (as defined below).

3.2 FFL Yokkaichi Tools. Following the date hereof, for each tool located at the Yokkaichi Facility that is owned or leased by FFL (each, an "FFL YOK Tool"), the Parent Parties shall negotiate in good faith and agree on whether:

(a) such FFL YOK Tool or FFL's leasehold interest in such FFL YOK Tool, as the case may be, shall be sold to FPL or FAL [***]; or

(b) such FFL YOK Tool shall be removed from the Yokkaichi Facility, whether in furtherance of a K1 Capacity Transfer or otherwise.

[***], the Parties shall cause such FFL YOK Tool or leasehold interest in such FFL YOK Tool to be assigned to FPL or FAL (in the case of clause (a)), or cause such FFL YOK Tool to be removed from the Yokkaichi Facility (in the case of clause (b)), in each case, as agreed by the Parent Parties and following the date of such agreement by the Parent Parties, but in any event no later than December 31, 2027.

3.3 Reallocation and Relocation of FFL Capacity at YOK. The Parties shall cause FFL's JV Capacity at the Yokkaichi Facility (as reflected in the CTLO for the Yokkaichi Facility) to be reallocated to FPL and/or FAL[***], or to be transferred to the K1 Facility [***], in each case, following the date of this Agreement, but in any event no later than December 31, 2027.

3.4 Cessation of FFL Yokkaichi Activities.

(a) The Parties shall cause FFL's JV Capacity, and manufacturing and other material operations, at the Yokkaichi Facility to be wound down in an orderly manner in accordance with a schedule to be mutually agreed by the Parent Parties, but in any event no later than December 31, 2027.

(b) The Cessation Date (as defined below) shall be no later than December 31, 2027, and FFL shall have no JV Capacity, or manufacturing or other material operations, at the Yokkaichi Facility following December 31, 2027.

(c) As used herein, "Cessation Date" shall mean the date on which: (a) there are no longer any FFL YOK Tools, and (b) FFL no longer has JV Capacity at the Yokkaichi Facility (as reflected in the CTLO for the Yokkaichi Facility).

4. COVENANTS AND OTHER AMENDMENTS

4.1 FF Master Agreement. Any reference in the FF Master Agreement to the FFL Commitment and Extension Agreement dated as of December 12, 2017 shall hereby be amended to also include a reference to this Agreement.

4.2 Certain Identified Amendments. Each amendment to the Master Operative Documents set forth in Exhibit A shall be effective as of the date hereof.

4.3 [***].

4.4 Conflicts. To the extent any provision in the FP Operative Documents or the FA Operative Documents that pertains to the Y5 Facility expressly conflicts with any provision in the FF Operative Documents, such provision in the FF Operative Documents shall control as to such conflict except as expressly stated herein [***].

5. MISCELLANEOUS

5.1 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.

5.2 Other Terms. Further to Section 1.1 above, the general, miscellaneous, interpretive, non-disclosure and other terms and conditions provided in Appendix A shall apply to this Agreement as if set forth herein.

5.3 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.

[Signature page follows]

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

SANDISK LLC

By: /s/ Siva Sivaram

Name: Siva Sivaram
Title: Chief Executive Officer

SANDISK (CAYMAN) LIMITED

By: /s/ Stephanie Wells

Name: Stephanie Wells
Title: Director

SANDISK (IRELAND) LIMITED

By: /s/ Stephanie Wells

Name: Stephanie Wells
Title: Director

SANDISK FLASH B.V.

By: /s/ Stephanie Wells

Name: Stephanie Wells
Title: Director

TOSHIBA MEMORY CORPORATION

By: /s/ Yasuo Naruke

Name: Yasuo Naruke
Title: President and Chief Executive Officer

TOSHIBA MEMORY IWATE CORPORATION

By: /s/ Akimichi Yonekura

Name: Akimichi Yonekura
Title: President and Chief Executive Officer

FLASH PARTNERS, LTD.

By: /s/ Shinichi Nitta

Name: Shinichi Nitta
Title: President and Chief Executive Officer

FLASH ALLIANCE, LTD.

By: /s/ Shinichi Nitta

Name: Shinichi Nitta
Title: President and Chief Executive Officer

FLASH FORWARD, LTD.

By: /s/ Shinichi Nitta

Name: Shinichi Nitta
Title: President and Chief Executive Officer

Exhibit A**Certain Identified Amendments****1. APPENDIX A**

Appendix A to the FF Master Agreement shall be amended as follows:

1.1 **Certain Definitions**. The following defined terms are hereby added to the “Definitions” of Appendix A to the FF Master Agreement:

“FFL Second Extension Agreement” has the meaning set forth in the K1 Facility Agreement.

“K1 Facility” has the meaning set forth in the K1 Facility Agreement

“K1 Facility Agreement” means the K1 Facility Agreement, dated May 15, 2019, 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.

“Kitakami Facility” has the meaning set forth in the K1 Facility Agreement.

“TMI” has the meaning set forth in the K1 Facility Agreement.

“WD” has the meaning set forth in the K1 Facility Agreement.

“Cessation Date” has the meaning set forth in the FFL Second Extension Agreement.

“Y5 Facility” or “Y5” means the facility known by the Parties as “Y5.”

1.2 **Section 2.15**. Section 2.15 is hereby amended by adding the following sentence to the end of the Section:

“Any capitalized term used, but not defined, herein shall have the meaning set forth for such term in the K1 Facility Agreement.”

2. Y5 MASTER FRAMEWORK

2.1 **Framework**. The Parties acknowledge and agree that, except as otherwise stated in this Agreement or the K1 Facility Agreement:

(a) the rights and obligations of FFL in the FF Master Agreement, New Y2 Agreement and the Y6 Agreement (in each case, as amended) relating to all aspects of the Y5 Facility, including but not limited to (i) capacity for, the manufacture of, and the acquisition of NAND Flash Memory Products and BiCS Products in the Y5 Facility, (ii) investments in the Y5 Facility, (iii) the installation of tools for the manufacture of NAND Flash Memory Products and BiCS Products in the Y5 Facility and (iv) any other activities in the Y5 Facility (collectively, the

“Y5-Related Activities”), are hereby extended to FPL and FAL with respect to the Y5-Related Activities;

(b) the terms and conditions set forth in the FF Master Agreement, the New Y2 Agreement and the Y6 Agreement (in each case, as amended) that apply to FFL’s Y5-Related Activities shall and hereby do apply to FPL’s and FAL’s Y5-Related Activities;

(c) WD and SanDisk shall have the same rights and obligations set forth in the FF Master Agreement, the New Y2 Agreement and the Y6 Agreement (in each case, as amended) with respect to FPL’s and FAL’s Y5-Related Activities as they would have if FPL and FAL, respectively, were FFL, and SanDisk Cayman and SanDisk Ireland were SanDisk Flash;

(d) TMC shall have the same rights and obligations set forth in the FF Master Agreement, the New Y2 Agreement and the Y6 Agreement (in each case, as amended) with respect to FPL’s and FAL’s Y5-Related Activities as it would have if FPL and FAL, respectively, were FFL;

in each case, as if the FF Master Agreement, the New Y2 Agreement and the Y6 Agreement contemplated FPL’s and FAL’s Y5-Related Activities on such terms.

2.2 Amendments. In furtherance of the foregoing, the FF Master Agreement, the New Y2 Agreement and the Y6 Agreement shall be, and hereby is, amended to effect the result set forth in Section 2.1 of this Exhibit A and to be consistent with Sections 4.3(b)(i), (v), (vi) and (vii), including but not limited to the following provisions of the FF Master Agreement:

- (a) Section 3.1 Purpose;
- (b) Section 3.2 Products;
- (c) Section 3.3(a) JV Space;
- (d) Section 5.1(a) Performance of Obligations;
- (e) Section 5.2 Public Announcements;
- (f) Section 6.1 Tool Acquisition;
- (g) Section 6.2 Technology Transfers;
- (h) Section 6.6 Capacity Sharing Arrangement;
- (i) Section 6.7 SanDisk Reservation Option;
- (j) Section 6.8 Engineering Wafers and Development Expense;
- (k) Section 6.10 Y5 Headcount Plan and Working Group;
- (l) Section 7.3 Adjustment Payment;
- (m) Section 7.4 Cost Terms;
- (n) Section 7.5 Negative Impacts;
- (o) Section 8.2 Y5 Facility;

- (p) Section 8.3 FF Foundry Agreement;
- (q) Section 8.4 FF Purchase and Supply;
- (r) Section 8.6 Other Matters;
- (s) Schedule 6.2(a) Technology Transfer Costs; and
- (t) Schedule 7.4(a) Fixed Manufacturing Costs and Variable Manufacturing Costs.

3. FLASH FORWARD MASTER AGREEMENT

The FF Master Agreement is hereby amended as follows:

3.1 Parties to FF Master Agreement. TMC, SanDisk LLC and SanDisk Flash acknowledge and agree that SanDisk Cayman and SanDisk Ireland shall be, and hereby are, added as parties to the FF Master Agreement (as amended) and shall be fully bound by, and subject to, all of the covenants, conditions and agreements thereunder that are required to be performed, observed, or satisfied by SanDisk Flash with respect to the Y5 Facility or Y5-Related Activities, and may exercise all of the rights thereunder that may be exercised by SanDisk Flash with respect to the Y5 Facility or Y5-Related Activities, in each case, as though an original party thereto in the same manner and to the same extent as if SanDisk Cayman and SanDisk Ireland were SanDisk Flash.

3.2 Escalation.

(a) Matters related to the Y5 Facility contemplated to be escalated or referred to FFL's Management Representatives shall be escalated or referred to FPL's Management Committee (for such matters related to FPL), FAL's Management Committee (for such matters related to FAL), and FFL's Management Representatives (for such matters related to FFL).

(b) Matters related to the Y5 Facility contemplated to be escalated or referred to FFL's Board of Executive Officers shall be escalated or referred to FPL's Board of Directors (for such matters related to FPL), FAL's Board of Directors (for such matters related to FAL), and FFL's Board of Executive Directors (for such matters related to FFL).

3.3 Section 6.10. Section 6.10 is hereby amended as follows:

(a) The title for Section 6.10(a) is hereby amended from "Flash Forward Headcount Plan and Working Group" to "Y5 Headcount Plan and Working Group".

(b) Section 6.10(a)(i) is hereby deleted and replaced in its entirety as follows:

"The Parties will meet and mutually agree on an overall headcount plan for [***], which will incorporate [***] (the "Y5 Headcount Plan")"

(c) All references to "FF Headcount Plan" is hereby replaced with "Y5 Headcount Plan."

3.4 Section 8.1. Section 8.1 (Flash Forward Management) is hereby deleted and replaced in its entirety as follows:

"8.1 Y5 Representatives; Y5 Operating Committee

(a) SanDisk and Toshiba shall have an Operating Committee for Y5 Facility operations (the “Y5 Operating Committee”) consisting of a senior executive designated by each of SanDisk Corporation and Toshiba (each such individual the “SanDisk Representative” and the “Toshiba Representative,” respectively, and each of SanDisk Corporation and Toshiba for purposes of this Section 8.1, a “Designating Party”) each of whom shall represent the relevant Designating Party on a day-to-day basis at the Y5 Facility. Each Designating Party shall notify the other Designating Party in advance of any replacement of its representative. If a Designating Party requests in good faith that the other Designating Party’s representative be replaced with another person from the other Designating Party’s organization, the other Designating Party shall consider and discuss in good faith with the requesting Designating Party such request, provided that such replacement, if any, shall be determined solely by such other Designating Party. [***].

(b) The Y5 Operating Committee’s purpose is to give SanDisk and Toshiba the ability to influence the day to day operating decisions of the Y5 Facility. The Y5 Operating Committee is intended to be a collaborative body with real-time communications, respectful consultation and dispute resolution and shall work together with the goal of making the Y5 Facility the most advanced and competitive (cost and technology) memory fabrication facility in the world. The Y5 Operating Committee shall have the authority to determine all matters concerning the day-to-day operations of the Y5 Facility (including staffing matters as provided in Section 6.10(a)(iii) of the Master Agreement), subject to those matters reserved to the Board of Executive Officers or Board of Executive Directors, as applicable, of the JVs or the Parties under the JV Operating Agreements, as well as to the requirements of this Agreement, the Articles of Incorporation of the JVs and the Companies Act. The Y5 Operating Committee shall communicate on a day-to-day basis with respect to the status of Y5 Facility operations and any other issues that may arise, and shall meet in person no less than two (2) times per week, or such other times and frequency as may be agreed upon by all members of such committee. If the members of the Y5 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 Board of Executive Officers or Board of Executive Directors of the applicable JV(s) which shall endeavor to immediately resolve the issue. Special meetings of the Board of Executive Officers or Board of Executive Directors of the applicable JV(s) may be noticed for issues requiring urgent resolution. The Parties contemplate that while a special meeting of the Board of Executive Officers or Board of Executive Directors of the applicable JV(s) is being noticed, their respective management teams will discuss any issues that the Y5 Operating Committee could not resolve. If the Board of Directors or Board of Executive Officers of the applicable JV(s) are unable to agree on any such issue after [***] (by unanimous agreement), such issue shall be submitted to the Management Committee or the Management Representatives of the applicable JV(s) for final resolution. This Agreement, the FP Master Agreement and the FA Master Agreement separately provide for procedures if the Management Committee or the Management Representatives, as applicable, are unable to reach agreement on such issue.

(c) The Y5 Operating Committee shall hold a monthly review meeting in English at the Yokkaichi Facility on [***] of each calendar month, unless otherwise agreed by the Parties or the Y5 Operating Committee. The Y5 Operating Committee shall prepare and distribute to the Parties (at least three (3) Business Days in advance of the monthly review meetings) monthly reports in English with respect to the engineering activities, operations and financial affairs of the applicable JV(s) and the Y5 Facility.

(d) Upon the request of either SanDisk Corporation or Toshiba, the Y5 Operating Committee shall provide the Parties with (i) any management or operation reports of the JVs related to the Y5 Facility (which no Designating Party shall have an obligation to translate) and (ii) simultaneously in Japanese and English, those management and operating reports identified on Schedule 5.3 of the FF Operating Agreement as mutually agreed upon from time to time by the Parties. The Y5 Operating Committee and the K1 Operating Committee (as defined in the K1 Facility Agreement) will cooperate to obtain any information relating to K1 Facility management or operations necessary for such reports. Upon reasonable request from SanDisk Corporation, Toshiba employees shall explain such reports to SanDisk's employees and respond to questions from SanDisk's employees; provided, however, that SanDisk acknowledges and agrees that Toshiba shall not be responsible for SanDisk's failure to understand any such reports."

3.5 Section 9.1(j). Section 9.1(j) is hereby deleted and replaced in its entirety as follows:

"(j) In connection with any termination of Flash Forward, the FF Master Agreement and/or the FF Operating Agreement:

(i) the Parties shall exercise their respective reasonable best efforts to plan such termination in advance with the goal of minimizing related costs;

(ii) with respect to employees of TMC and employees of WD or any of its Subsidiaries working at the K1 Facility, (A) in the case of those that are employees of TMC or any of its Subsidiaries, TMC will use its reasonable best efforts to retrain or relocate such individuals to other TMC facilities, and (B) in the case of those that are employees of WD or any of its Subsidiaries, WD will use its reasonable best efforts to retrain or relocate such individuals to other WD facilities, each to the maximum extent possible;

(iii) [***]; and

(iv) [***].

(v) [***].

3.6 Section 10.1. Section 10.1 is hereby amended by adding the following sentence at the end of such Section:

"The provisions of this Agreement and the FF Operative Documents that relate to rights and obligations with respect to the Y5 Facility (other than those rights and obligations that are intended to apply only to FFL), including the production of NAND Flash Memory Products and/or BiCS Products within the Y5 Facility, pricing of such products produced within the Y5 Facility, or cost allocation with respect to the Y5 Facility, shall survive the termination or expiration this Agreement for so long as: (A) Flash Partners has JV Capacity in, or has lots at the Yokkaichi Facility that are processed in, the Y5 Facility and the FP Master Agreement remains in effect or (B) Flash Alliance has JV Capacity in, or has lots at the Yokkaichi Facility that are processed in, the Y5 Facility and the FA Master Agreement remains in effect."

3.7 Financing. The terms and conditions with respect to the financing necessary to enable committed or agreed capacity expansions or other investment in FPL or FAL for JV

Capacity at the Y5 Facility shall be as follows: (i) 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 (ii) 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.

4. FLASH FORWARD OPERATING AGREEMENT

The FF Operating Agreement is hereby amended as follows:

4.1 Escalation. Matters related to the Y5 Facility contemplated to be escalated or referred to FFL's Management Representatives shall be escalated or referred to FPL's Management Committee (for such matters related to FPL), FAL's Management Committee (for such matters related to FAL), and FFL's Management Representatives (for such matters related to FFL).

4.2 Y5 Representatives; Y5 Operating Agreement. Section 5.3 is hereby deleted in its entirety.

5. NEW Y2 AGREEMENT

The New Y2 Agreement is hereby amended as follows:

5.1 Section 14.1. Section 14.1 shall be amended by deleting the Section in its entirety and replacing it with the following:

"14.1 Term. This Agreement shall continue in full force and effect until the later of (a) the date on which (i) there are no longer tools owned or leased by FFL at the Yokkaichi Facility, and (ii) FFL no longer has JV Capacity at the Yokkaichi Facility (as reflected in the CTLO for the Yokkaichi Facility), (b) the termination of the FPL Master Agreement, and (c) the termination of the FAL Master Agreement, unless earlier terminated as hereinafter provided. The term of this Agreement may be extended by mutual agreement of both Parent Parties."

6. Y6 AGREEMENT

The Y6 Agreement is hereby amended as follows:

6.1 Section 15.1. Section 15.1 shall be amended by deleting the Section in its entirety and replacing it with the following:

"15.1 Term. This Agreement shall continue in full force and effect until the later of (a) the date on which (i) there are no longer tools owned or leased by FFL at the Yokkaichi Facility, and (ii) FFL no longer has JV Capacity at the Yokkaichi Facility (as reflected in the CTLO for the Yokkaichi Facility), (b) the termination of the FPL Master Agreement, and (c) the termination of the FAL Master Agreement, unless earlier terminated as hereinafter provided. The term of this Agreement may be extended by mutual agreement of both Parent Parties."

7. JV FOUNDRY AGREEMENTS

The FPL Foundry Agreement and FAL Foundry Agreement are hereby amended as follows:

7.1 FPL Foundry Agreement and FAL Foundry Agreement Framework.

(a) [***], the Parties acknowledge and agree that, except as otherwise set forth in this Agreement or the K1 Facility Agreement, the terms and conditions set forth in the FPL Foundry Agreement and FAL Foundry Agreement that apply to the purchases of Products (as defined therein) by FPL and FAL from TMC shall hereby apply to the purchases of JV Y5 NAND Flash Memory Products and JV Y5 BiCS Products by FPL and FAL from TMC as if the FPL Foundry Agreement and FAL Foundry Agreement contemplated the purchase of JV Y5 NAND Flash Memory Products and JV Y5 BiCS Products by FPL and FAL from TMC.

(b) In furtherance of the foregoing, the FPL Foundry Agreement and FAL Foundry Agreement shall be, and hereby are, amended to effect the result set forth in Section 6.1(a) of this Exhibit A [***].

8. PURCHASE AND SUPPLY AGREEMENTS

Toshiba Memory's and SanDisk's FPL Purchase and Supply Agreement and FAL Purchase and Supply Agreement are hereby amended as follows:

8.1 FPL Purchase and Supply Agreement and FAL Purchase and Supply Agreement Framework.

(a) [***], the Parties acknowledge and agree that, except as otherwise set forth in this Agreement or the K1 Facility Agreement, the terms and conditions set forth in Toshiba Memory's and SanDisk's FPL Purchase and Supply Agreement and FAL Purchase and Supply Agreement that apply to the purchases of Products (as defined therein) by Toshiba Memory, WD and SanDisk from FPL and FAL shall hereby apply to the purchases of JV Y5 NAND Flash Memory Products and JV Y5 BiCS Products by Toshiba Memory, WD and SanDisk from FPL and FAL as if Toshiba Memory's and SanDisk's FPL Purchase and Supply Agreement and FAL Purchase and Supply Agreement contemplated the purchase of JV Y5 NAND Flash Memory Products and JV Y5 BiCS Products by Toshiba Memory, WD and SanDisk from FPL and FAL.

(b) In furtherance of the foregoing, the Toshiba Memory's and SanDisk's FPL Purchase and Supply Agreement and FAL Purchase and Supply Agreement shall be, and hereby are, amended to effect the result set forth in Section 8.1(a) of this Exhibit A [***].

8.2 [***].

8.3 [***].

9. JOINT VENTURE RESTRUCTURE AGREEMENT

The JVRA is hereby amended as follows:

9.1 Section 5.1(a)(ii). Section 5.1(a)(ii) shall be amended by deleting the Section in its entirety and replacing it with the following:

“(ii) For the Toshiba Capacity in the Y3, Y4 and Y5 Facility, Toshiba will provide to the applicable JV [***], including but not limited to [***]. Notwithstanding the foregoing, Toshiba shall have sole discretion over the use and disposition of the equipment representing the Toshiba Capacity, provided [***].”

Exhibit B

[**]

B-1

**WESTERN DIGITAL CORPORATION
SUBSIDIARIES OF THE COMPANY**

Name of Entity	State or Other Jurisdiction of Incorporation or Organization
Amplidata N.V.	Belgium
EasyStore Memory Limited	Ireland
Fusion-io LLC	Delaware
Fusion-io Poland SP.Z.O.O.	Poland
Fusion-io Singapore Private Ltd	Singapore
HGST (Shenzhen) Co., Ltd.	China
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 Singapore Pte. Ltd.	Singapore
HGST Technologies India Private Limited	India
HGST Technologies Malaysia Sdn. Bhd.	Malaysia
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
Sandbox Expansion LLC	Delaware
SanDisk (Cayman) Limited	Cayman Islands
SanDisk (Ireland) Limited	Ireland
SanDisk 3D IP Holdings Ltd	Cayman Islands
SanDisk China Limited	Ireland
SanDisk China LLC	Delaware
SanDisk Flash B.V.	Netherlands
SanDisk Hong Kong Limited	Hong Kong
SanDisk India Device Design Centre Private Limited	India
SanDisk Information Technology (Shanghai) Co. Ltd.	China
SanDisk International Limited	Ireland
SanDisk International Middle East FZE	United Arab Emirates
SanDisk Italy S.R.L.	Italy
SanDisk Korea Limited	Korea
SanDisk LLC	Delaware
SanDisk Malaysia Sdn. Bhd.	Malaysia
SanDisk Manufacturing Americas, LLC	Delaware
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 Technologies India Private Limited	India
SanDisk Trading (Shanghai) Co. Ltd.	China
SanDisk Trading Holdings Limited	Ireland
SanDisk UK, Limited	United Kingdom
SD International Holdings Ltd.	Cayman Islands
SMART Storage Systems GmbH	Austria
STEC International Holding, LLC	California
Suntech Realty, Inc.	Philippines
Virident Systems International Holdings Ltd.	Cayman Islands
Virident Systems, LLC	Delaware
WD Media (Malaysia) Sdn.	Malaysia
WD Technologies Nigeria Limited	Nigeria
Western Digital (Argentina) S.A.	Argentina
Western Digital (France) SARL	France
Western Digital (I.S.) Limited	Ireland
Western Digital (Malaysia) Sdn. Bhd.	Malaysia
Western Digital (Singapore) Pte. Ltd.	Singapore
Western Digital (UK) Limited	United Kingdom
Western Digital (Vietnam) Limited Liability Company	Vietnam
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 Denmark ApS	Denmark
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 GK	Japan
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 Israel Ltd.	Israel
Western Digital Korea, Ltd.	Korea

Western Digital Latin America, LLC	Delaware
Western Digital Storage Technology Innovation Center (Shenzhen) Co. Ltd.	China
Western Digital Storage Technologies (Philippines) Corp.	Philippines
Western Digital Storage Technologies (Thailand) Ltd.	Thailand
Western Digital Taiwan Co., Ltd.	Taiwan
Western Digital Tech and Regional Center (M) Sdn. Bhd.	Malaysia
Western Digital Technologies, Inc.	Delaware

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, 333-122475, 333-129813, 333-155661, 333-163133, 333-180286, 333-185194, 333-191216, 333-191910, 333-202646, 333-207842, 333-211420, 33-60168, 333-221407, 333-228331, 333-235257, 333-250968, and 333-261184), and the registration statement on Form S-3 (No. 333-259102) of our report dated August 24, 2022, with respect to the consolidated financial statements of Western Digital Corporation and subsidiaries and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP

Santa Clara, California
August 24, 2022

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, David V. Goeckeler, 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/ David V. Goeckeler

David V. Goeckeler
Chief Executive Officer

Dated: August 24, 2022

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Wissam Jabre, 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/ Wissam Jabre

Wissam Jabre

*Executive Vice President and Chief Financial Officer
(Principal Financial Officer)*

Dated: August 24, 2022

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 July 1, 2022 (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/ David V. Goeckeler

David V. Goeckeler
Chief Executive Officer

Dated: August 24, 2022

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 July 1, 2022 (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/ Wissam Jabre

Wissam Jabre

*Executive Vice President and Chief Financial Officer
(Principal Financial Officer)*

Dated: August 24, 2022