

NETLIST INC  
Form 10-K  
March 04, 2016  
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended January 2, 2016

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 001-33170

NETLIST, INC.

(Exact name of registrant as specified in its charter)

Delaware 95-4812784  
State or other jurisdiction of incorporation or organization (I.R.S. employer Identification No.)  
175 Technology Drive, Suite 150

Irvine, CA 92618

(Address of principal executive offices) (Zip Code)

(949) 435-0025

(Registrant's telephone number, including area code)

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

Title of each class	Name of each exchange on which registered
Common Stock, par value \$0.001 per share	The NASDAQ Capital Market

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

None

(Title of class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer	Accelerated filer	Non-accelerated filer (Do not check if a smaller reporting company)	Smaller reporting company
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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, based on the closing price of the registrant's common stock as reported on The NASDAQ Global Market on June 27, 2015, the last business day of the registrant's most recently completed second fiscal quarter, was approximately \$24.4 million. For purposes of this calculation, it has been assumed that all shares of the registrant's common stock held by directors, executive officers and persons beneficially owning ten percent or more of the registrant's common stock are held by affiliates. The treatment of these persons as affiliates for purposes of this calculation is not conclusive as to whether such persons are, in fact, affiliates of the registrant for any other purpose.

The number of shares outstanding of the registrant's common stock, as of the latest practicable date:

Common Stock, par value \$0.001 per share

50,354,363 shares of common stock outstanding at February 29, 2016

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive proxy statement for the registrant's Annual Meeting of Stockholders for 2016 have been incorporated by reference into Part III of this Annual Report on Form 10-K.

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This Annual Report on Form 10-K includes “forward looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These forward looking statements relate to future events and our future performance, and are generally identified by words such as “believe”, “expect”, “anticipate”, “estimate”, “intend”, “strategy”, “may”, “will” and similar words or phrases. A forward looking statement is neither a prediction nor a guarantee of future events or circumstances, and our actual results could differ materially and adversely from those expressed in any forward looking statement. These forward looking statements are all based on currently available market, operating, financial and competitive information and assumptions and are subject to various risks and uncertainties. Important information regarding factors that could cause actual results to differ materially from such expectations is disclosed under the heading “Risk Factors” in Part I, Item 1A. and elsewhere in this report. These risks and uncertainties include, among others, risks associated with the launch and commercial success of our products, programs and technologies; the success of product, joint development and licensing partnerships; continuing development, qualification and volume production of HyperVault, EXPRESSvault™, NVvault™, HyperCloud® and VLP Planar-X RDIMM; the timing and magnitude of the continued decrease in our sales; our ability to leverage our NVvault™ and EXPRESSvault™ technology into a more diverse customer base; our need to raise additional capital and our ability to obtain financing when necessary; the rapidly-changing nature of technology; risks associated with intellectual property, including patent infringement litigation against us as well as the costs and unpredictability of litigation over infringement of our intellectual property and the possibility of our patents being reexamined or reviewed by the USPTO and PTAB; volatility in the pricing of DRAM ICs and NAND flash; changes in and uncertainty of customer acceptance of, and demand for, our existing products and products under development, including uncertainty of and/or delays in product orders and product qualifications; delays in our and our customers’ product releases and development; introductions of new products by competitors; changes in end-user demand for technology solutions; our ability to attract and retain skilled personnel; our reliance on suppliers of critical components and vendors in the supply chain; fluctuations in the market price of critical components; evolving industry standards; the political and regulatory environment in the PRC; and general economic and market conditions. Given these risks, uncertainties and other important factors, you should not place undue reliance on these forward-looking statements. These forward-looking statements represent our estimates and assumptions only as of the date made. Except as required by law, we undertake no obligation to revise or update publicly any forward looking statements for any reason.

## PART I

### Item 1. Business

#### Overview

We design, manufacture and sell a wide variety of high-performance, logic based memory subsystems for the global datacenter, data storage and high performance computing markets. Our memory subsystems consist of combinations of dynamic random access memory integrated circuits (“DRAM ICs” or “DRAM”), NAND flash memory (“NAND flash”), application specific integrated circuits (“ASICs”) and other components assembled on printed circuit boards (“PCBs”). We primarily market and sell our products to leading original equipment manufacturer (“OEM”) customers, hyperscale

datacenter operators and data storage vendors. Our solutions are targeted at applications where memory plays a key role in meeting system performance requirements. We leverage a portfolio of proprietary technologies and design techniques, including combining discrete semiconductor technologies from third parties such as DRAM and NAND flash to function as one efficient planar design, and alternative packaging techniques to deliver memory subsystems with persistence, high density, small form factor, high signal integrity, attractive thermal characteristics, reduced power consumption and low cost per bit. Our NVvault™ product is the first to offer both DRAM and NAND flash in a standard form factor memory subsystem as a persistent dual in line memory module (“DIMM”) in mission critical applications. Our HyperCloud® technology incorporates our patented rank multiplication and load reduction technologies. We also have pending and issued patents covering fundamental aspects of hybrid memory DIMM designs that incorporate combinations of DRAM and/or NAND flash, such as our NVvault™ product. We are focused on monetizing our patent portfolio through our products business and, where appropriate, through licensing arrangements with third parties that wish to incorporate our patented technologies in their products.

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### Intellectual Property Rights and Enforcement

Our high-performance memory subsystems are developed in part using our proprietary technologies, and we believe that the strength of our intellectual property rights will be important to the success of our business. We utilize patent and trade secret protection, confidentiality agreements with customers and partners, disclosure and invention assignment agreements with employees and consultants and other contractual provisions to protect our intellectual property and other proprietary information. As of January 2, 2016, we had 60 U.S. and foreign patents issued and 33 U.S. and foreign patent applications pending. Assuming that they are properly maintained, our patents will expire at various dates between 2022 and 2030. Our issued patents and patent applications relate to the use of custom logic in high-performance memory subsystems, PCB design, layout and packaging techniques. We intend to actively pursue the filing of additional patent applications related to our technology advancements in order to expand and strengthen our portfolio. Our patents cover different aspects of our technology innovations and various claim scopes and, as such, we believe that our business is not materially dependent upon any one claim in any of our existing patents or pending patent applications.

We intend to vigorously defend our patent and other intellectual property rights, including, when necessary, pursuit of enforcement actions against entities we believe are using our patented solutions in their products. We may seek injunctive relief in the course of enforcing our intellectual property rights in certain instances, and in other instances we may enter into settlement or license agreements. We dedicate substantial resources to protecting our intellectual property, including efforts to defend our patents against challenges made by way of reexamination and review proceedings at the U.S. Patent and Trademark Office (“USPTO”) and Patent Trial and Appeal Board (“PTAB”). These activities are likely to continue for the foreseeable future, without any guarantee that any ongoing or future patent protection and litigation activities will be successful. We also are subject to litigation based on claims that we have infringed on the intellectual property of others, against which we intend to defend ourselves vigorously.

### Licensing and Joint Development Partnerships

We intend to seek opportunities to monetize our intellectual property rights through joint development or licensing arrangements, such as our November 2015 Joint Development and License Agreement (“JDLA”) with Samsung Electronics Co., Ltd. (“Samsung”), pursuant to which, among other things, we and Samsung will work together to jointly develop a standardized product interface for NVDIMM-P memory modules in order to facilitate broad industry adoption of this new technology, we and Samsung have cross-licensed our respective patent portfolios for this purpose, and we may enter into an additional agreement with Samsung in the future to grant Samsung a commercial license to our NVDIMM-P technology. Commercial licensing arrangements, whether arising from partnerships such as the JDLA with Samsung or from patent infringement enforcement actions, can be structured in a variety of ways, including one-time paid up license fees or ongoing royalty arrangements. We aim to generate a portion of our revenues with these types of licensing arrangements in the future, but our efforts to monetize our intellectual property rights and technologies may not be successful.



## Our Products

Our technical expertise and our ability to introduce new or enhanced products that achieve customer or market acceptance in a timely manner has been and we believe will continue to be important factors in developing and maintaining our competitive position. Below are descriptions of our commercially available products and new products that have been publicly announced.

### NVvault™ Family

We were the first to develop and market memory subsystems that incorporate both DRAM and NAND flash in a single NVvault™ persistent DIMM solution. NVvault™ was originally used for mission critical backups during power interruption in Redundant Array of Independent Disks (“RAID”) and main memory. NVvault™ has evolved beyond its original application to a variety of other applications, including hyperscale computing for cloud, big data, on-line banking and other real time applications where NVvault™ is also used as a data accelerator. We are working to further enhance the capabilities of our NVvault™ technology in these new applications, and we are also seeking to expand our

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customer base through the integration of NVvault™ into leading storage motherboards. NVvault™ is incorporated in our EXPRESSvault™ PCIe solution for both acceleration and backup in storage applications. Our NVvault™ product line consists primarily of battery-free and battery-powered flash backed cache memory subsystems targeting RAID storage, application acceleration and mission critical data integrity. NVvault™ battery-free provides server and storage OEMs a solution for enhanced datacenter fault recovery. We have experienced a steady decline in NVvault sales in recent years, due in large part to our loss of our most significant NVvault customer, Dell, beginning in 2012. We have also experienced supply chain disruptions with respect to the components of our NVvault products, which has contributed to the decrease in sales of these products. There were no sales of NVvault™ products to Dell in the years ended January 2, 2016 and December 27, 2014, and we expect no future demand from Dell for our NVvault™ products. We continue to pursue qualifications with other potential significant customers for these products and we are working to remedy our ongoing supply chain disruptions, however, our efforts to expand our qualifications and manage our supply chain may not result in significant revenues from the sale of the NVvault™ family of products.

HyperVault, a future product that combines DRAM and NAND flash, is still under development and may require substantial additional investment and the services and attention of key employees who have competing demands on their available time. We believe that our JDLA will advance the development of this product and that Samsung will prove to be an important strategic partner that can facilitate getting this technology to market.

For the years ended January 2, 2016 and December 27, 2014, our NVvault™ non-volatile RDIMM used in cache-protection and data logging applications, including our NVvault™ battery-free, the flash-based cache system, accounted for approximately 20% and 44% of total net product sales, respectively.

## HyperCloud®

Our HyperCloud® product incorporates our patented rank multiplication technology, which increases memory capacity, and our patented load reduction technology, which increases memory bandwidth. We expect that these patented technologies will make possible improved levels of performance for memory intensive datacenter applications and workloads, including enterprise virtualization, cloud computing infrastructure, business intelligence real-time data analytics, and high-performance computing.

## Specialty Memory Modules and Flash-Based Products

The remainder of our product revenues is primarily from OEM sales of specialty memory modules and flash-based products, the majority of which are utilized in data center and industrial applications. When developing custom modules for an equipment product launch, we engage with our OEM customers from the earliest stages of new product definition, providing us unique insight into their full range of system architecture and performance requirements. This close collaboration has also allowed us to develop a significant level of systems expertise. We

leverage a portfolio of proprietary technologies and design techniques, including efficient planar design, alternative packaging techniques and custom semiconductor logic, to deliver memory subsystems with persistence, high density, small form factor, high signal integrity, attractive thermal characteristics, reduced power consumption and low cost per bit. Revenues from our specialty modules and flash-based products are subject to fluctuation as a result of the life cycles of the products into which our modules are incorporated. Our ability to continue to generate revenues from specialty memory modules and flash-based products is dependent on our ability to qualify our products on new platforms as current platforms reach the end of their lifecycles, and on the state of the global economy.

## Technology

We have a portfolio of proprietary technologies and design techniques and have assembled an engineering team with expertise in semiconductors, printed circuit boards, memory subsystem and system design. Our technology competencies include:

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### IC Design Expertise.

We have designed special algorithms that can be implemented in stand-alone integrated circuits or integrated into other functional blocks in ASICs. We utilize these algorithms in the HyperCloud ® chipset to incorporate rank multiplication and load reduction functionality. We also incorporate these algorithms in our NVvault™ product line of RDIMMS.

### NVvault™.

NVvault is a memory subsystem that incorporates both DRAM and NAND flash in a single persistent DIMM solution. NVvault™ combines the best attributes of DRAM, including speed, durability and reliability, with high densities, lower power and lowest costs provided by NAND flash. This combination enables us to provide application acceleration and mission critical backup during power interruption for cloud infrastructure, virtualization, analytics and database applications. NVvault™ is incorporated in our EXPRESSvault™ PCIe solution for both acceleration and backup in storage applications.

### Proprietary PCB Designs.

We utilize advanced techniques to optimize electronic signal strength and integrity within a PCB. These techniques include the use of 8-layer or 10-layer boards, matching conductive trace lengths, a minimized number of conductive connectors, or vias, and precise load balancing to, among other benefits, help reduce noise and crosstalk between adjacent traces. In addition, our proprietary designs for the precise placement of intra-substrate components allow us to assemble memory subsystems with significantly smaller physical size, enabling OEMs to develop products with smaller footprints for their customers.

### Very Low Profile Designs.

We were the first company to create memory subsystems in a form factor of less than one inch in height. We believe our proprietary board design technology is particularly useful in the blade server market, where efficient use of motherboard space is critical. Our technology has allowed us to decrease the system board space required for memory, and improve thermal performance and operating speeds, by enabling our customers to use alternative methods of component layout.

### Thermal Management Designs.

We design our memory subsystems to ensure effective heat dissipation. We use thermal cameras to obtain thermal profiles of the memory subsystem during the design phase, allowing us to rearrange components to enhance thermal characteristics and, if necessary, replace components that do not meet specifications. We also develop and use proprietary heat spreaders to enhance the thermal management characteristics of our memory subsystems.

## Customers

During our 2015 fiscal year we primarily marketed and sold our products to leading OEMs in the server, data storage and communications markets. Consistent with the concentrated nature of the OEM customer base in our target markets, a small number of large customers have historically accounted for a significant portion of our net sales. Net product sales to our two largest customers, Dell and Singh Semiconductors and Systems, represented approximately 27% and 10% of our net product sales in 2015, respectively. Dell, IBM and Nimble Storage, Inc. represented approximately 20%, 14% and 19% of our net product sales in 2014, respectively. For further information regarding our sales to our OEM customer base, please refer to Note 10 to our consolidated financial statements included in Part II, Item 8 of this report.

The composition of major customers and their respective contributions to our net sales have varied and will likely continue to vary from period to period as our OEMs progress through the life cycle of the products they produce and sell.

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Our sales are made primarily pursuant to standard purchase orders that may be rescheduled on relatively short notice, which reduces our backlog of firm orders and our ability to accurately estimate future customer requirements for our products. Customers are generally allowed limited rights of return for up to 30 days, except for sales of excess inventories, which contain no right-of-return privileges. Estimated returns are provided for at the time of sale based on historical experience or specific identification of an event necessitating a reserve. While these returns have historically been within our expectations and the provisions established, we cannot guarantee that we will continue to experience similar return rates in the future. Any significant increase in product failure rates and the resulting product returns could have a material adverse effect on our operating results for the period or periods in which such returns materialize.

We offer warranties on our memory subsystems generally ranging from one to three years, depending on the product and negotiated terms of purchase agreements with our customers. Such warranties require us to repair or replace defective product returned to us during such warranty period at no cost to the customer. Our estimates for warranty related costs are recorded at the time of sale based on historical and estimated future product return rates and expected repair or replacement costs. While such costs have historically been within our expectations and the provisions established, unexpected changes in failure rates could have a material adverse impact on us, requiring additional warranty reserves, and adversely affecting our gross profit and gross margins.

For additional information regarding our net product sales from external customers by geographic area, refer to Note 11 to our consolidated financial statements included in Part II, Item 8 of this report.

## Sales and Marketing

We market and sell our products through a direct sales force and a network of independent sales representatives. Our sales activities focus primarily on developing strong relationships at the technical, marketing and executive management levels within market-leading OEMs.

We utilize well-trained, highly technical program management teams to successfully drive new product development and quickly respond to our customers' needs and expectations. Our program management teams provide quick response times and act as a single point-of-contact for routine issues during the sales process. Additionally, they address the long-term business and technology goals of our customers. We employ a team approach to business development whereby our sales team and independent representatives identify, qualify and prioritize customer prospects through offices in a number of locations worldwide.

## Manufacturing

We manufacture substantially all of our products at our facility in Suzhou in the People's Republic of China (the "PRC"). Our advanced engineering and design capabilities, combined with our in-house manufacturing processes, allow us to assemble our memory subsystems reliably and in high volume. Our advanced, customized manufacturing facilities are capable of surface mount assembly, subsystem testing, system level burn-in testing, programming, marking, labeling and packaging. At each stage of the production cycle, including product prototyping, qualification sample production and high-volume manufacturing and delivery, we focus on providing our customers with rapid response and short manufacturing turn-around times. Manufacturing cycle times for our products are typically one week or less, and in some cases as short as two days, from receipt of order.

We acquire components and materials such as ASICs, DRAM ICs and NAND flash directly from integrated circuit manufacturers and assemble them into finished subsystems. We believe that one of our key strengths is the efficient procurement and management of components for our subsystems, which benefits our customers in the form of lower costs and increased product availability. We have a limited number of suppliers, including Arrow Electronics and Barun Electronics, Inc. each of which comprised more than 10% of our total purchases in 2015 and Arrow Electronics comprised more than 10% of our total purchases in 2014. Further, our JDLA with Samsung contractually commits Samsung to supply NAND flash and DRAM products to us on our request at competitive prices. For further information regarding our supplier concentrations, refer to Note 10 to our consolidated financial statements included in Part II, Item 8 of this report. We have developed strong supplier relationships with these and other key DRAM IC and NAND flash manufacturers, which we believe gives us direct and ready access to the critical components that we need for our

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production activities. We typically qualify our products with our customers using multiple manufacturers of DRAM ICs and NAND flash. The flexibility to choose from several DRAM IC and NAND flash providers allows us to minimize product cost and maximize product availability. We schedule production based on purchase order commitments and anticipated orders. We release raw materials to the manufacturing floor by means of an on-line shop floor control system, which allows for internal quality analysis, direct access to inventory information and production floor material tracking. We have a flexible manufacturing workforce which allows us to manage unforecasted demand. In addition, in order to mitigate inventory risks, we have the capability to sell excess quantities of certain component inventories of DRAM ICs and NAND flash to distributors and other users of memory integrated circuits.

Our quality assurance engineers work with our suppliers to ensure that the raw materials we receive meet our high quality standards. These engineers also perform onsite supplier factory audits and use our internal test and inspection systems to verify that purchased components and materials meet our specifications. Our supplier quality program and incoming material quality control program are important aspects of our overall manufacturing process.

We perform ongoing reliability testing on our memory subsystems and share the results of that testing with our customers. We believe that this improves the system design process and allows for the elimination of potential problems at the earliest possible stage. In addition, we have implemented procedures which require that all of our memory subsystems undergo functional and system burn-in testing prior to delivery to the customer. We complement our test capabilities with advanced imaging technology to inspect the quality of our assemblies.

We are certified in International Organization for Standardization (“ISO”) 9001:2008 Quality Management Systems and ISO 14001:2004 Environmental Management Standards.

## Competition

Our products are primarily targeted for the server, high-performance computing and communications markets. These markets are intensely competitive, as numerous companies vie for business opportunities at a limited number of large OEMs. We face competition from DRAM suppliers, memory module providers and logic suppliers for many of our products, including NVvault and HyperCloud®. Additionally, if and to the extent we enter new markets or pursue licensing arrangements to monetize our technologies and intellectual property portfolio, we may face competition from a large number of competitors that produce solutions utilizing similar or competing technologies.

Some of our customers and suppliers may have proprietary products or technologies that are competitive with our products, or could develop internal solutions or enter into strategic relationships with, or acquire, existing high-density memory module providers. Any of these actions could reduce our customers’ demand for our products. Some of our significant suppliers of memory integrated circuits may be able to manufacture competitive products at lower costs by leveraging internal efficiencies, or could choose to reduce our supply of memory integrated circuits, adversely



affecting our ability to manufacture our memory subsystems on a timely basis, if at all.

Certain of our competitors have substantially greater financial, technical, marketing, distribution and other resources, broader product lines, lower cost structures, greater brand recognition and longer standing relationships with customers and suppliers. Some of our competitors may also have a greater ability to influence industry standards than we do, as well as more extensive patent portfolios.

We expect our competitors to continue to improve the performance of their current products, reduce their prices and introduce new or enhanced technologies that may offer greater performance and improved pricing. If we are unable to match or exceed the improvements made by our competitors, our market position would deteriorate and our net sales would decline. In addition, our competitors may develop future generations and enhancements of competitive products that may render our technologies obsolete or uncompetitive. Our ability to compete in our current target markets and in future markets will depend in large part on our ability to successfully develop, introduce and sell new and enhanced products or technologies on a timely and cost-effective basis and to respond to changing market requirements. We

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believe that the principal competitive factors in the selection of high-performance memory subsystems by potential customers are:

- understanding of OEM system and business requirements;
- timeliness of new value-add product introductions;
- development of advanced technologies that we could license to third parties before our competitors;
- design characteristics and performance;
- quality and reliability;
- track record of volume delivery;
- credibility with the customer;
- fulfillment capability and flexibility; and
- price.

We believe that we compete favorably with respect to these factors. However, our current and future competitors could develop competing products that could cause a decline in sales or loss of market acceptance of our products or technologies.

## Research and Development

The market for high-performance memory subsystems is constantly changing and therefore continuous development of new technology, processes and product innovation is necessary in order to be successful as a leading supplier. We believe that the continued and timely development of new products and improvement of existing products are critical to maintaining our competitive position. Our team of engineers focuses on developing custom semiconductor logic devices, hybrid memory, DRAM and NAND flash products with innovative packaging solutions, improved electrical signal integrity and thermal characteristics that enhances reliability over the life of the system and achieves higher speeds and lowers power consumption. Also, our engineers incorporate various new techniques and methodologies for

testing as well as new processes for manufacturing our products.

Our engineering staff closely engages with our customers and their engineering teams at early stages in their system development. This collaboration allows our engineers to understand the customer's system architecture, power budget, operating environment such as air flow and operating temperature and any mechanical constraints. Our engineers use this information to provide guidance and solutions to implement optimum memory subsystems to our customers. An important aspect of our research and development effort is to understand the challenges faced by our customers and provide cost effective solutions that satisfy their requirements by utilizing our industry knowledge, proprietary technologies and technical expertise.

We use advanced design tools in development of our products that allow us to model behavior of a signal trace on our memory modules as well as airflow and thermal profiles of all components in the system. These design tools enable real-time simulation for signal integrity and behavioral modeling of our designs using the Input/Output Buffer Information Specification and Simulation Program with Integrated Circuit Emphasis models of our suppliers' components. These simulation tools help us reduce or eliminate electronic signal reflections, clock skews, signal jitter and noise, which can reduce system performance and reliability. These efforts allow our engineers to develop optimum thermal solutions for our customer base.

We believe that to remain competitive we must continue to focus on developing advanced memory technologies. We have invested significant resources in the design of custom semiconductor logic devices. These logic

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devices are integrated into our next-generation memory subsystems in order to improve their performance. Logic devices in our NVvault™ and EXPRESSVault™ hybrid memory products enable DRAM and flash memory to be efficiently combined for the purposes of accelerating system performance and providing mission critical back-up. The development of these semiconductor devices is an important part of our overall effort to maintain a strong competitive position in our industry based on advanced memory technologies.

Our customers typically do not separately compensate us for design and engineering work involved in developing application specific products for them. Our total expenditures for research and development were approximately \$6.0 million and \$4.6 million for 2015 and 2014, respectively.

## Employees

At January 2, 2016, we had approximately 110 employees (including 87 regular employees and 23 temporary employees). Approximately 45 of the regular employees were located in the U.S., and approximately 42 were located in the PRC. We had 63 employees in operations, 28 employees in research and development, 12 employees in sales and marketing, and 7 employees engaged in other administrative functions. We are not party to any collective bargaining agreements with any of our employees. We have never experienced a work stoppage, and we believe our employee relations are good.

## Compliance with Environmental Laws

We are subject to various and frequently changing U.S. federal, state and local and foreign governmental laws and regulations relating to the protection of the environment, including those governing the discharge of pollutants into the air and water, the management and disposal of hazardous substances and wastes, the cleanup of contaminated sites and the maintenance of a safe workplace. In particular, some of our manufacturing processes may require us to handle and dispose of hazardous materials from time to time. For example, in the past our manufacturing operations have used lead-based solder in the assembly of our products. Today, we use lead-free soldering technologies in our manufacturing processes, as this is required for products entering the European Union. We could incur substantial costs, including clean-up costs, civil or criminal fines or sanctions and third-party claims for property damage or personal injury as a result of violations of, or noncompliance with, environmental laws and regulations. Although we have not incurred significant costs to date to comply with these laws and regulations, new laws or changes to current laws and regulations to make them more stringent could require us to incur significant costs to remain in compliance.

## General Information

We were incorporated in Delaware in June 2000 and commenced operations in September 2000. Our principal executive offices are located at 175 Technology Drive, Suite 150, Irvine, California 92618 and our telephone number at that address is (949) 435-0025. We maintain a website at [www.netlist.com](http://www.netlist.com) (this reference to our website is an inactive textual reference only and is not intended to incorporate our website into this report). We file reports with the Securities and Exchange Commission (“SEC”) and make available, free of charge, on or through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy and information statements and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Our website also contains copies of our corporate governance policy, code of business conduct and ethics, insider trading policy and whistleblower policy, as well as copies of the charters for our audit committee, compensation committee and nominating and corporate governance committee.

#### Item 1A. Risk Factors

You should consider each of the following factors as well as the other information in this report in evaluating our business and our prospects. The risks described below are not the only ones we face. Additional risks we are not presently aware of or that we currently believe are immaterial may also impair our business operations. If any of the events described below were to occur, our financial condition, our ability to access capital resources, our results of

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operations and/or our future growth prospects could be materially and adversely affected and the market price of our common stock could decline. In assessing these risks, you should also refer to the other information contained or incorporated by reference in this report, including our consolidated financial statements and related notes.

Risks related to our business

We have historically incurred losses and may continue to incur losses.

Since the inception of our business in 2000, we have only experienced one fiscal year (2006) with profitable results. In order to regain profitability, or to achieve and sustain positive cash flows from operations in the future, we must reduce operating expenses and/or increase our revenues and gross margins. Although we have in the past engaged in a series of cost reduction actions, and believe that we could reduce our current level of expenses through elimination or reduction of strategic initiatives, such expense reductions alone may not make us profitable or allow us to sustain profitability if it is achieved and eliminating or reducing strategic initiatives could limit our opportunities and prospects. Our ability to achieve profitability will depend on increased revenue growth from, among other things, monetization of our intellectual property, increased demand for our memory subsystems and other product offerings, as well as our ability to expand into new and emerging markets. We may not be successful in achieving the necessary revenue growth or the expected expense reductions. Moreover, we may be unable to sustain past or expected future expense reductions in subsequent periods. We may not achieve profitability or sustain such profitability, if achieved, on a quarterly or annual basis in the future.

Any failure to achieve profitability could result in increased capital requirements and pressure on our liquidity position. We believe our future capital requirements will depend on many factors, including our levels of net sales, the timing and extent of expenditures to support sales, marketing, research and development activities, the expansion of manufacturing capacity both domestically and internationally, the continued market acceptance of our products, intellectual property enforcement activities and strategic collaborations or other transactions. Our capital requirements could result in our having to, or otherwise choosing to, seek additional funding through public or private equity offerings or debt financings. Such funding may not be available when needed, on terms acceptable to us or at all, any of which could result in our inability to meet our financial obligations and other related commitments.

We may not have sufficient working capital to fund our planned operations, and, as a result, we may need to raise additional capital in the future in order to continue operating our business and developing new products and technologies, which capital may not be available when needed, on acceptable terms or at all.

We believe that, taking into account our planned activities, we have sufficient cash resources to satisfy our capital needs for at least the next twelve months. However, our estimates of our operating expenses and working capital requirements could be incorrect, and we may use our cash resources faster than we presently anticipate. Further, some or all of our ongoing or planned investments may not be successful and could result in further losses. In addition, irrespective of our cash resources, we may be contractually or legally obligated to make certain investments which cannot be postponed.

Our capital requirements will depend on many factors, including, among others:

- the acceptance of, and demand for, our products;
- our success and that of our strategic partners in developing and selling products derived from our technology;
- our continued listing on NASDAQ;
- the costs of further developing our existing, and developing new, products or technologies;
- the extent to which we invest in new technology, testing and product development;
- Costs associated with defending and enforcing our intellectual property rights;
- the timing of vendor payments and the collection of receivables, among other factors affecting our working capital;
- the exercise of outstanding options or warrants to acquire our common stock;
- the number and timing of acquisitions and other strategic transactions in which we participate, if any; and
- the costs associated with the continued operation, and any future growth, of our business.

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We expect to rely in the near term on funds raised pursuant to recent public and private placement offerings of debt and equity securities (although we have used certain of those funds to repay certain indebtedness as required by the repayment terms thereof). However, until we can generate a sufficient amount of revenue to finance our cash requirements, which we may never do, we may need to increase our liquidity and capital resources by one or more measures, which may include, among others, reducing operating expenses, restructuring our balance sheet by negotiating with creditors and vendors, entering into strategic partnerships or alliances, raising additional financing through the issuance of debt, equity, or convertible securities and working to increase revenue growth through new product sales. There is no guarantee that we will be able to obtain capital when needed, on terms acceptable to us, or at all.

Insufficient funds would have a material adverse effect on our business and operations and could cause us to fail to execute our business plan, fail to take advantage of future opportunities or fail to respond to competitive pressures or customer requirements, and further may require us to significantly modify our business model and/or reduce our operations, which could include delaying, scaling back or eliminating some or all of our ongoing and planned investments in corporate infrastructure, research and development projects, regulatory submissions, business development initiatives, and sales and marketing activities, among other investments. Modification of our business model and operations could result in an impairment of assets, the effects of which cannot be determined. Furthermore, if we continue to issue equity or convertible debt securities to raise additional funds, our existing stockholders may experience significant dilution, and the new equity or debt securities may have rights, preferences and privileges that are superior to those of our existing stockholders. If we incur additional debt, it may increase our leverage relative to our earnings or to our equity capitalization.

We have incurred a material amount of indebtedness to fund our operations, the terms of which require that we pledge substantially all of our assets as security. Our level of indebtedness and the terms of such indebtedness, could adversely affect our operations and liquidity.

We have incurred debt secured by all of our assets under our credit facilities and term loans with Samsung Venture Investment Corporation (“SVIC”) and Silicon Valley Bank (“SVB”). Our convertible promissory note issued to SVIC is secured by a first priority security interest in our patent portfolio and a second priority security interest in substantially all of our other assets. Our credit facility with SVB is secured by a first priority security interest in all of our assets other than our patent portfolio, to which SVB has a second priority security interest. The SVIC and/or SVB debt instruments contain customary representations, warranties and indemnification provisions, as well as affirmative and negative covenants that, among other things, restrict our ability to:

- incur additional indebtedness or guarantees;
  
- incur liens;
  
- make investments, loans and acquisitions;
  
- consolidate or merge



- sell, lease, lend, exclusively license or otherwise transfer assets, including capital stock of subsidiaries;
- alter our business;
- change any provision of our organizational documents;
- engage in transactions with affiliates; and
- pay dividends or make distributions.

The SVIC and SVB debt instruments also include events of default, including, among other things, payment defaults, breaches of representations, warranties or covenants, certain bankruptcy events, and certain material adverse

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changes. If we were to default under either debt instrument and were unable to obtain a waiver for such a default, among other remedies, the lenders could accelerate our obligations under the debt instruments and exercise their rights to foreclose on their security interests, which would cause substantial harm to our business and prospects.

Incurrence and maintenance of this debt could have material consequences, such as:

- requiring us to dedicate a portion of our cash flow from operations and other capital resources to debt service, thereby reducing our ability to fund working capital, capital expenditures, and other cash requirements;
- increasing our vulnerability to adverse economic and industry conditions;
- limiting our flexibility in planning for, or reacting to, changes and opportunities in, our business and industry, which may place us at a competitive disadvantage; and
- limiting our ability to incur additional debt on acceptable terms, if at all.

Our revenues and results of operations have been substantially dependent on NVvault™ and we may be unable to replace revenue lost from the rapid decline in prior generation NVvault™ sales.

For the years ended January 2, 2016 and December 27, 2014, our NVvault™ non-volatile RDIMM used in cache protection and data logging applications, including our NVvault™ battery-free, the flash-based cache system, accounted for approximately 20% and 44% of total net product sales, respectively. We have experienced a steady decline in NVvault sales in recent years, due in large part to our loss of our most significant NVvault customer, Dell, beginning in 2012. We recognized no NVvault™ sales to Dell in the years ended January 2, 2016 and December 27, 2014. We expect no future demand from Dell for our NVvault™ products. In order to leverage our NVvault™ technology and diversify our customer base, and to secure one or more new key customers, we continue to pursue additional qualifications of NVvault™ with other OEMs and to target new customer applications such as online transaction processing, virtualization, big data analytics, high speed transaction processing, high-performance database, and in-memory database applications. We also introduced EXPRESSvault™ in March 2011 and the next generation of EXPRESSvault™ (EV3) in July 2015 and we continue to pursue qualification of the next generation DDR3 NVvault™ and DDR4 NVvault™ with customers. Our future operating results will depend on our ability to commercialize these NVvault™ product extensions, as well as other products such as HyperVault™ and other high-density and high-performance solutions. HyperVault™ is still under development and may require substantial additional investment and the services and attention of key employees who have competing demands on their available time. Although we believe that our JDLA will advance the development of this product and that Samsung will prove to be an important strategic partner that can facilitate getting this technology to market, our partnership with Samsung and any other steps we take to further the development of this or any other products in development could fail. If we are not successful in expanding our qualifications or marketing any new or enhanced products, we will be unable to secure revenues sufficient to replace lost NVvault revenue and our results of operations and prospects could be materially

harm.

We are subject to risks relating to our focus on developing our HyperCloud® and NVvault™ products and lack of market diversification.

We have historically derived a substantial portion of our net sales from sales of our high-performance memory subsystems for use in the server market. We expect these memory subsystems to continue to account for a portion of our net sales in the near term. We believe that continued market acceptance of these products or derivative products that incorporate our core memory subsystem technology for use in servers is critical to our success.

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We have invested a significant portion of our research and development budget into the design of ASIC and hybrid devices, including the HyperCloud® memory subsystem, introduced in November 2009, as well as our NVvault family of products. These products are subject to increased risks as compared to our legacy products. For example:

- we are dependent on a limited number of suppliers for both the DRAM ICs and the ASIC devices that are essential to the functionality of the HyperCloud® memory subsystem, and we have experienced supply chain disruptions and shortages of DRAM and flash required to create our HyperCloud®, our NVvault™ and Planar X VLP products as a result of business issues that are specific to our suppliers or the industry as a whole;
- we may be unable to achieve new qualifications or customer or market acceptance of the HyperCloud® memory subsystem, NVvault™ products or other new products such as HyperVault™, or achieve such acceptance in a timely manner;
- the HyperCloud® memory subsystem, NVvault™ products or other new products such as HyperVault™ may contain currently undiscovered flaws, the correction of which would result in increased costs and time to market; and
- we are required to demonstrate the quality and reliability of the HyperCloud® memory subsystem or other new products to our customers, and are required to qualify these new products with our customers, which requires a significant investment of time and resources prior to the receipt of any revenue from such customers.

We experienced a longer qualification cycle than anticipated with our HyperCloud® memory subsystems, and as a result, we have not generated significant HyperCloud® product revenues to date relative to our investment in the product. We entered into collaborative agreements with both IBM and HP pursuant to which these OEMs qualified the 16GB and 32GB versions of HyperCloud® for use with their products. While we and each of the OEMs committed financial and other resources toward the collaborations, the efforts undertaken for each of these collaborative agreements have not resulted in significant revenues or product margins for us to date. As a result, we have not achieved and we may never achieve sufficient revenues or margins from our HyperCloud® products to justify their costs.

Additionally, if the demand for servers deteriorates or if the demand for our products to be incorporated in servers declines, our operating results would be adversely affected, and we would be forced to diversify our product portfolio and our target markets. We may not be able to achieve this diversification, and our inability to do so may adversely affect our business.

We use a small number of FPGAs, DRAM ICs and NAND flash suppliers and are subject to risks of disruption in the supply of FPGAs, DRAM ICs and NAND flash.

Our ability to fulfill customer orders or produce qualification samples is dependent on a sufficient supply of field-programmable gate arrays (“FPGAs”), DRAM ICs and NAND flash, which are essential components of our memory subsystems. There are a relatively small number of suppliers of FPGAs, DRAM ICs and NAND flash, and we purchase from only a subset of these suppliers. We have no long term FPGA, DRAM or NAND flash supply contracts.

From time to time, shortages in DRAM ICs and NAND flash have required some suppliers to limit the supply of their DRAM ICs and NAND flash. We have experienced supply chain disruptions and shortages of DRAM and flash required to create our HyperCloud®, NVvault™ and Planar X VLP products, and we are continually working to secure adequate supplies of DRAM and flash necessary to fill customers’ orders for our products in a timely manner. If we are unable to obtain a sufficient supply of DRAM ICs or NAND flash to meet our customers’ requirements, these customers may reduce future orders for our products or not purchase our products at all, which would cause our net sales to decline and harm our operating results. In addition, our reputation could be harmed and, even assuming we are successful in resolving supply chain disruptions, we may not be able to replace any lost business with new customers, and we may lose market share to our competitors.

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Our dependence on a small number of suppliers and the lack of any guaranteed sources of FPGAs, DRAM and NAND flash supply expose us to several risks, including the inability to obtain an adequate supply of these important components, price increases, delivery delays and poor quality.

Historical declines in customer demand and our revenues caused us to reduce our purchases of DRAM ICs and NAND flash. Such fluctuations could continue in the future. If we fail to maintain sufficient purchase levels with some suppliers, our ability to obtain supplies of raw materials may be impaired due to the practice of some suppliers to allocate their products to customers with the highest regular demand.

Our customers qualify the FPGAs, DRAM ICs and NAND flash of our suppliers for use in their systems. If one of our suppliers should experience quality control problems, it may be disqualified by one or more of our customers. This would disrupt our supplies of FPGAs, DRAM ICs and NAND flash and reduce the number of suppliers available to us, and may require that we qualify a new supplier. If our suppliers are unable to produce qualification samples on a timely basis or at all, we could experience delays in the qualification process, which could have a significant impact on our ability to sell that product.

We may be unsuccessful in establishing and operating a licensing business.

Although we intend to pursue an intellectual property-based licensing business in order to monetize our intellectual property rights, we are currently operating based on a products-based business model and we may never be successful in developing any licensing business. Although we may pursue an additional agreement with Samsung in the future to grant Samsung a commercial license to our NVDIMM-P technology pursuant to the terms of our JDLA with Samsung, we may never successfully enter into any such agreement with Samsung or any other third party. Further, the terms of any such agreements that we may reach with third party licensees are uncertain and may not provide significant royalty or other licensing revenues to us to justify our costs of developing and maintaining the licensed intellectual property or may otherwise include terms that are not favorable to us. Additionally, the pursuit of a licensing business would require by its nature that we relinquish certain of our rights to our technologies and intellectual property that we license to third parties, which could limit our ability to base our own products on such technologies. Additionally, the establishment of this new business may be more difficult or costly than expected and require additional personnel, investments and may be a significant distraction for management. In connection with any licensing business we may develop, our licenses and royalties revenue may be uncertain from period to period and we may be unable to attract sufficient licensing customers, which would materially and adversely affect our results of operations. Our ability to increase our license revenue will depend on a variety of factors, including novelty, utility, performance, quality, breadth and depth of our current and future intellectual property and technology, all as compared to that of our competitors, as well as our sales and marketing capabilities. Once secured, license revenue may be negatively affected by factors within and outside our control, including reductions in our customers' sales prices, sales volumes and the terms of such license arrangements. If we are not successful in achieving a licensing business, we may never recoup the costs associated with developing, maintaining, defending and enforcing our intellectual property portfolio and our financial condition would be harmed.

We may lose our competitive position if we are unable to timely and cost-effectively develop new or enhanced products that meet our customers' requirements and achieve market acceptance or technologies that we can monetize through licensing arrangements or otherwise.

Our industry is characterized by intense competition, rapid technological change, evolving industry standards and rapid product obsolescence. Evolving industry standards and technological change or new, competitive technologies could render our existing products and technologies obsolete. Accordingly, our ability to compete in the future will depend in large part on our ability to identify and develop new or enhanced products and technologies on a timely and cost-effective basis, and to respond to changing customer requirements. In order to develop and introduce new or enhanced products and technologies, we need to:

- identify and adjust to the changing requirements of our current and potential customers;
- identify and adapt to emerging technological trends and evolving industry standards in our markets;

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- design and introduce cost-effective, innovative and performance-enhancing features that differentiate our products and technologies from those of our competitors;
- develop relationships with potential suppliers of components required for these new or enhanced products and technologies;
- qualify these products for use in our customers' products; and
- develop and maintain effective marketing strategies.

Our product development efforts are costly and inherently risky. It is difficult to foresee changes or developments in technology or anticipate the adoption of new standards. Moreover, once these changes or developments are identified, if at all, we will need to hire the appropriate technical personnel or retain third-party designers, develop the product, identify and eliminate design flaws, and manufacture the product in production quantities either in-house or through third-party manufacturers. As a result, we may not be able to successfully develop new or enhanced products or we may experience delays in the development and introduction of new or enhanced products. Delays in product development and introduction could result in the loss of, or delays in generating, net sales or other revenues and the loss of market share, as well as damage to our reputation. Even if we develop new or enhanced products or technologies, they may not meet our customers' requirements or gain market acceptance.

Our customers require that our products undergo a lengthy and expensive qualification process without any assurance of net sales.

Our prospective customers generally make a significant commitment of resources to test and evaluate our memory subsystems prior to purchasing our products and integrating them into their systems. This extensive qualification process involves rigorous reliability testing and evaluation of our products, which may continue for nine months or longer and is often subject to delays. In addition to qualification of specific products, some of our customers may also require us to undergo a technology qualification if our product designs incorporate innovative technologies that the customer has not previously encountered. Such technology qualifications often take substantially longer than product qualifications and can take over a year to complete. Qualification by a prospective customer does not ensure any sales to that prospective customer. Even after successful qualification and sales of our products to a customer, changes in our products, our manufacturing facilities, our production processes or our component suppliers may require a new qualification process, which may result in additional delays.

In addition, because the qualification process is both product specific and platform specific, our existing customers sometimes require us to re-qualify our products, or to qualify our new products, for use in new platforms or applications. For example, as our OEM customers transition from prior generation architectures to current generation



architectures, we must design and qualify new products for use by those customers. In the past, the process of design and qualification has taken up to nine months to complete, during which time our net sales to those customers declined significantly. After our products are qualified, it can take several months before the customer begins production and we begin to generate net sales from such customer.

Likewise, when our memory and NAND flash component vendors discontinue production of components, it may be necessary for us to design and qualify new products for our customers. Such customers may require of us or we may decide to purchase an estimated quantity of discontinued memory components necessary to ensure a steady supply of existing products until products with new components can be qualified. Purchases of this nature may affect our liquidity. Additionally, our estimation of quantities required during the transition may be incorrect, which could adversely impact our results of operations through lost revenue opportunities or charges related to excess and obsolete inventory.

We must devote substantial resources, including design, engineering, sales, marketing and management efforts, to qualify our products with prospective customers in anticipation of sales. Significant delays in the qualification process, could result in an inability to keep up with rapid technology change or new, competitive technologies. If we

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delay or do not succeed in qualifying a product with an existing or prospective customer, we will not be able to sell that product to that customer, which may result in our holding excess and obsolete inventory and harm our operating results and business.

Sales to a limited number of customers represent a significant portion of our net sales and the loss of, or a significant reduction in sales to, any one of these customers could materially harm our business.

Sales to certain of our OEM customers have historically represented a substantial majority of our net product sales. Approximately 27% and 10% of our net product sales in the fiscal year ended January 2, 2016 were to two customers. Approximately 20%, 14% and 19% of our net product sales in the fiscal year ended December 27, 2014 were to three customers. The composition of major customers and their respective contributions to our net product sales have varied and will likely continue to vary from period to period as our OEMs progress through the life cycle of the products they produce and sell. We do not have long-term agreements with any of our customers and, as such, any or all of them could decide at any time to discontinue, decrease or delay their purchase of our products. In addition, the prices that these customers pay for our products could change at any time. The loss of any of our OEM customers, or a significant reduction in sales to any of them, could significantly reduce our net sales and adversely affect our operating results. Further, we may not be able to sell some products developed for one customer to a different customer because our products are often designed to address specific customer requirements, and even if we are able to sell these products to another customer, our margin on such products may be reduced.

Our ability to maintain or increase our net sales to our key customers depends on a variety of factors, many of which are beyond our control. These factors include our customers' continued sales of servers and other computing systems that incorporate our memory subsystems and our customers' continued incorporation of our products into their systems. Because of these and other factors, net sales to these customers may not continue and the amount of such net sales may not reach or exceed historical levels in any future period. Because these customers account for a substantial portion of our net sales, the failure of any one of these customers to pay on a timely basis would negatively impact our cash flow. In addition, while we may not be contractually obligated to accept returned products, we may determine that it is in our best interest to accept returns in order to maintain good relations with our customers.

A limited number of relatively large potential customers dominate the markets for our products.

Our target markets are characterized by a limited number of large companies. Consolidation in one or more of our target markets may further increase this industry concentration. As a result, we anticipate that sales of our products will continue to be concentrated among a limited number of large customers in the foreseeable future. We believe that our financial results will depend in significant part on our success in establishing and maintaining relationships with, and effecting substantial sales to, these potential customers. Even if we establish and successfully maintain these relationships, our financial results will be largely dependent on these customers' sales and business results.

If a standardized memory solution that addresses the demands of our customers is developed, our net sales and market share may decline.

Many of our memory subsystems are specifically designed for our OEM customers' high-performance systems. In a drive to reduce costs and assure supply of their memory module demand, our OEM customers may endeavor to design Joint Electron Device Engineering Council ("JEDEC") standard DRAM modules into their new products. Although we also manufacture JEDEC modules, this trend could reduce the demand for our higher priced customized memory solutions, which would have a negative impact on our financial results. In addition, the adoption of a JEDEC standard module instead of a previously custom module might allow new competitors to participate in a share of our customers' memory module business that previously belonged to us.

If our OEM customers were to adopt JEDEC standard modules, our future business may be limited to identifying the next generation of high-performance memory demands of OEM customers and developing solutions that address such demands. Until fully implemented, any next generation of products may constitute a significantly smaller market, which would reduce our net sales and market share.

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We may not be able to maintain our competitive position because of the intense competition in our targeted markets.

Our products are primarily targeted for the server, high-performance computing and communications markets. These markets are intensely competitive, as numerous companies vie for business opportunities at a limited number of large OEMs. We face competition from DRAM suppliers, memory module providers and logic suppliers for many of our products, including NVvault and HyperCloud®. Additionally, if and to the extent we enter new markets or pursue licensing arrangements to monetize our technologies and intellectual property portfolio, we may face competition from a large number of competitors that produce solutions utilizing similar or competing technologies.

Some of our customers and suppliers may have proprietary products or technologies that are competitive with our products, or could develop internal solutions or enter into strategic relationships with, or acquire, existing high-density memory module providers. Any of these actions could reduce our customers' demand for our products. Some of our significant suppliers of memory integrated circuits may be able to manufacture competitive products at lower costs by leveraging internal efficiencies, or could choose to reduce our supply of memory integrated circuits, adversely affecting our ability to manufacture our memory subsystems on a timely basis, if at all.

Certain of our competitors have substantially greater financial, technical, marketing, distribution and other resources, broader product lines, lower cost structures, greater brand recognition and longer standing relationships with customers and suppliers. Some of our competitors may also have a greater ability to influence industry standards than we do, as well as more extensive patent portfolios.

Our ability to compete in our current target markets and in future markets will depend in large part on our ability to successfully develop, introduce and sell new and enhanced products or technologies on a timely and cost-effective basis and to respond to changing market requirements. We expect our competitors to continue to improve the performance of their current products, reduce their prices and introduce new or enhanced technologies that may offer greater performance and improved pricing. If we are unable to match or exceed the improvements made by our competitors, our market position would deteriorate and our net sales would decline. In addition, our competitors may develop future generations and enhancements of competitive products that may render our technologies obsolete or uncompetitive.

If we fail to protect our proprietary rights, our customers or our competitors might gain access to our proprietary designs, processes and technologies, which could adversely affect our operating results.

We rely on a combination of patent protection, trade secret laws and restrictions on disclosure to protect our intellectual property rights. We have submitted a number of patent applications regarding our proprietary processes and technology. It is not certain when or if any of the claims in the remaining applications will be allowed. As of January 2, 2016, we had 60 U.S. and foreign patents issued and over 33 pending applications worldwide. We intend

to continue filing patent applications with respect to most of the new processes and technologies that we develop. However, patent protection may not be available for some of these processes or technologies.

It is possible that our efforts to protect our intellectual property rights may not:

- prevent challenges to, or the invalidation or circumvention of, our existing intellectual property rights;
- prevent our competitors from independently developing similar products or technologies, duplicating our products or technologies or designing around any patents that may be issued to us;
- prevent disputes with third parties regarding ownership of our intellectual property rights;
- prevent disclosure of our trade secrets and know how to third parties or into the public domain;
- result in valid patents, including international patents, from any of our pending or future applications; or
- otherwise adequately protect our intellectual property rights.

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Others may attempt to reverse engineer, copy or otherwise obtain and use our proprietary technologies without our consent. Monitoring the unauthorized use of our technologies is difficult. We cannot be certain that the steps we have taken will prevent the unauthorized use of our technologies. This is particularly true in foreign countries, such as the PRC, where we have established a manufacturing facility and where the laws may not protect our proprietary rights to the same extent as applicable U.S. laws.

If some or all of the claims in our patent applications are not allowed, or if any of our intellectual property protections are limited in scope by the USPTO or our foreign patents being subjected to invalidation proceedings with their respective authorities, or by a court or circumvented by others, we could face increased competition with regard to our products and be unable to execute on our strategy of monetizing our intellectual property. Increased competition or an inability to monetize our intellectual property could significantly harm our business, our operating results and prospects. Currently four of our patents are the subject of Inter Partes Reexamination proceedings with the USPTO, or appeals therefrom, and we cannot assure you that any of these proceedings will result in an outcome favorable to us.

We are involved in and expect to continue to be involved in costly legal and administrative proceedings to defend against claims that we infringe the intellectual property rights of others or to enforce or protect our intellectual property rights.

As is common in the semiconductor industry, we have experienced substantial litigation regarding patent and other intellectual property rights. Lawsuits claiming that we are infringing others' intellectual property rights have been and may in the future be brought against us, and we are currently defending against claims of invalidity in the USPTO.

The process of obtaining and protecting patents is inherently uncertain. In addition to the patent issuance process established by law and the procedures of the USPTO, we must comply with JEDEC administrative procedures in protecting our intellectual property within its industry standard setting process. These procedures evolve over time, are subject to variability in their application, and may be inconsistent with each other. Failure to comply with JEDEC's administrative procedures could jeopardize our ability to claim that our patents have been infringed.

By making use of new technologies and entering new markets there is an increased likelihood that others might allege that our products infringe on their intellectual property rights. Litigation is inherently uncertain, and an adverse outcome in existing or any future litigation could subject us to significant liability for damages or invalidate our proprietary rights. An adverse outcome also could force us to take specific actions, including causing us to:

- cease manufacturing and/or selling products, or using certain processes, that are claimed to be infringing a third-party's intellectual property;

- pay damages (which in some instances may be three times actual damages), including royalties on past or future sales;
- seek a license from the third-party intellectual property owner to use their technology in our products, which license may not be available on reasonable terms, or at all; or
- redesign those products that are claimed to be infringing a third-party's intellectual property.

If any adverse ruling in any such matter occurs, any resulting limitations in our ability to market our products, or delays and costs associated with redesigning our products or payments of license fees to third parties, or any failure by us to develop or license a substitute technology on commercially reasonable terms could have a material adverse effect on our business, financial condition and results of operations.

There is a limited pool of experienced technical personnel that we can draw upon to meet our hiring needs. As a result, a number of our existing employees have worked for our existing or potential competitors at some point during their careers, and we anticipate that a number of our future employees will have similar work histories. In the past, some of these competitors have claimed that our employees misappropriated their trade secrets or violated non competition or

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non solicitation agreements. Some of our competitors may threaten or bring legal action involving similar claims against us or our existing employees or make such claims in the future to prevent us from hiring qualified candidates. Lawsuits of this type may be brought, even if there is no merit to the claim, simply as a strategy to drain our financial resources and divert management's attention away from our business.

Our business strategy also includes litigating claims against others, including our competitors, customers and former employees, to enforce our intellectual property, contractual and commercial rights including, in particular, our trade secrets, as well as to challenge the validity and scope of the proprietary rights of others. We could become subject to counterclaims or countersuits against us as a result of this litigation. Moreover, any legal disputes with customers could cause them to cease buying or using our products or delay their purchase of our products and could substantially damage our relationship with them.

Any litigation, regardless of its outcome, would be time consuming and costly to resolve, divert our management's time and attention and negatively impact our results of operations. As a result, any current or future infringement claims by or against third parties or claims for indemnification by customers or end users of our products resulting from infringement claims could materially adversely affect our business, financial condition or results of operations.

As a result of the unfavorable outcome in connection with the litigation against Diablo Technologies, Inc., for controller chips used by SanDisk Corporation in its high speed ULLtraDIMM SSD product line, we may expend significant resources to pursue an appeal in the case, which may not be resolved in a timely manner and may not yield a more favorable outcome. Moreover, the expenses associated with the matter, including a \$900,000 bond that has been forfeited, may materially adversely affect our financial condition and operating results. See Note 7 to our consolidated financial statements included in this report for further information about this litigation.

We may become involved in non-patent related litigation and administrative proceedings that may materially adversely affect us.

From time to time, we may become involved in various legal proceedings relating to matters incidental to the ordinary course of our business, including commercial, product liability, employment, class action, whistleblower and other litigation and claims and governmental and other regulatory investigations and proceedings. Such matters can be time-consuming, divert management's attention and resources and cause us to incur significant expenses. Furthermore, because litigation is inherently unpredictable, the results of these actions could have a material adverse effect on our business, results of operations and financial condition.

Our operating results may be adversely impacted by worldwide economic and political uncertainties and specific conditions in the markets we address, including the cyclical nature of and volatility in the memory market and semiconductor industry.



Adverse changes in domestic and global economic and political conditions have made it extremely difficult for our customers, our vendors and us to accurately forecast and plan future business activities, and these conditions have caused and could continue to cause U.S. and foreign businesses to slow spending on our products and services, which would further delay and lengthen sales cycles. In addition, sales of our products are dependent upon demand in the computing, networking, communications, printer, storage and industrial markets. These markets have been cyclical and are characterized by wide fluctuations in product supply and demand. These markets have also experienced significant downturns, often connected with, or in anticipation of, maturing product cycles, reductions in technology spending and declines in general economic conditions. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and the erosion of average selling prices and may result in reduced willingness of potential licensees to enter into license agreement with us.

We may experience substantial period-to-period fluctuations in operating results due to factors affecting the computing, networking, communications, printers, storage and industrial markets. A decline or significant shortfall in demand in any one of these markets could have a material adverse effect on the demand for our products and as a result, our sales would likely decline. In addition, because many of our costs and operating expenses are relatively fixed, if we

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are unable to control our expenses adequately in response to reduced sales, our gross margins, operating income and cash flow would be negatively impacted.

During challenging economic times our customers may face issues gaining timely access to sufficient credit, which could impair their ability to make timely payments to us. If that were to occur, we may be required to increase our allowance for doubtful accounts and our ability to timely collect payments would be negatively impacted. Furthermore, our vendors may face similar issues gaining access to credit, which may limit their ability to supply components or provide trade credit to us. We cannot predict the timing, strength or duration of any economic slowdown or subsequent economic recovery, either worldwide or in the memory market and related semiconductor industry. If the economy or markets in which we operate do not improve or if conditions worsen, our business, financial condition and results of operations will likely be materially and adversely affected. Additionally, the combination of our lengthy sales cycle coupled with challenging macroeconomic conditions could compound the negative impact on the results of our operations.

Our lack of a significant backlog of unfilled orders and the difficulty inherent in estimating customer demand makes it difficult to forecast our short-term production requirements to meet that demand, and any failure to optimally calibrate our production capacity and inventory levels to meet customer demand could adversely affect our revenues, gross margins and earnings.

We make significant decisions regarding the levels of business that we will seek and accept, production schedules, component procurement commitments, personnel needs and other resource requirements based on our estimates of customer requirements. We do not have long-term purchase agreements with any of our customers. Instead, our customers often place purchase orders no more than two weeks in advance of their desired delivery date, and these purchase orders generally have no cancellation or rescheduling penalty provisions. The short-term nature of commitments by many of our customers, the fact that our customers may cancel or defer purchase orders for any reason, and the possibility of unexpected changes in demand for our customers' products each reduce our ability to accurately estimate future customer requirements for our products. This fact, combined with the quick turn-around times that apply to each order, makes it difficult to forecast our production needs and allocate production capacity efficiently. As a result, we attempt to forecast the demand for the DRAM ICs, NAND flash and other components needed to manufacture our products, but any such forecasts could turn out to be wrong. Further, lead times for components vary significantly and depend on various factors, such as the specific supplier and the demand and supply for a component at a given time.

Our production expense and component purchase levels are based in part on our forecasts of our customers' future product requirements and to a large extent are fixed in the short term. As a result, we likely would be unable to adjust spending on a timely basis to compensate for any unexpected shortfall in customer orders. If we overestimate customer demand, we may have excess raw material inventory of DRAM ICs and NAND flash. If there is a subsequent decline in the prices of DRAM ICs or NAND flash, the value of our inventory will fall. As a result, we may need to write-down the value of our DRAM IC or NAND flash inventory, which may result in a significant decrease in our gross margin and financial condition. Also, to the extent that we manufacture products in anticipation of future demand that does not materialize, or in the event a customer cancels or reduces outstanding orders, we could

experience an unanticipated increase in our finished goods inventory. In the past, we have had to write-down inventory due to obsolescence, excess quantities and declines in market value below our costs. Any significant shortfall of customer orders in relation to our expectations could hurt our operating results, cash flows and financial condition.

Also, any rapid increases in production required by our customers could strain our resources and reduce our margins. If we underestimate customer demand, we may not have sufficient inventory of DRAM ICs and NAND flash on hand to manufacture enough product to meet that demand. We also may not have sufficient manufacturing capacity at any given time to meet our customers' demands for rapid increases in production. These shortages of inventory and capacity would lead to delays in the delivery of our products, and we could forego sales opportunities, lose market share and damage our customer relationships.

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Declines in our average sales prices, driven by volatile prices for DRAM ICs and NAND flash, among other factors, may result in declines in our revenues and gross profit.

Our industry is competitive and historically has been characterized by declines in average sales price, based in part on the market price of DRAM ICs and NAND flash, which have historically constituted a substantial portion of the total cost of our memory subsystems. Our average sales prices may decline due to several factors, including overcapacity in the worldwide supply of DRAM and NAND flash memory components as a result of worldwide economic conditions, increased manufacturing efficiencies, implementation of new manufacturing processes and expansion of manufacturing capacity by component suppliers.

Once our prices with a customer are negotiated, we are generally unable to revise pricing with that customer until our next regularly scheduled price adjustment. Consequently, we are exposed to the risks associated with the volatility of the price of DRAM ICs and NAND flash during that period. If the market prices for DRAM ICs and NAND flash increase, we generally cannot pass the price increases on to our customers for products purchased under an existing purchase order. As a result, our cost of sales could increase and our gross margins could decrease. Alternatively, if there are declines in the price of DRAM ICs and NAND flash, we may need to reduce our selling prices for subsequent purchase orders, which may result in a decline in our expected net sales.

In addition, since a large percentage of our sales are to a small number of customers that are primarily distributors and large OEMs, these customers have exerted, and we expect they will continue to exert, pressure on us to make price concessions. If not offset by increases in volume of sales or the sales of newly-developed products with higher margins, decreases in average sales prices would likely have a material adverse effect on our business and operating results.

If the supply of component materials used to manufacture our products is interrupted or if our inventory becomes obsolete, our results of operations and financial condition could be adversely affected.

We use consumables and other components, including PCBs, to manufacture our memory subsystems. We sometimes procure PCBs and other components from single or limited sources to take advantage of volume pricing discounts. Material shortages or transportation problems could interrupt the manufacture of our products. These delays in manufacturing could adversely affect our results of operations.

Frequent technology changes and the introduction of next-generation products also may result in the obsolescence of other items of inventory, such as our custom-built PCBs, which could reduce our net sales and gross margin and adversely affect our operating performance and financial condition.

A prolonged disruption of our manufacturing facility could have a material adverse effect on our business, financial condition and results of operations.

We maintain a manufacturing facility in the PRC for producing most of our products, which allows us to utilize our materials and processes, protect our intellectual property and develop the technology for manufacturing. A prolonged disruption or material malfunction of, interruption in or the loss of operations at our manufacturing facility or the failure to maintain a sufficient labor force at such facility could require us to rely on third parties for our manufacturing needs, which generally increases our manufacturing costs and decreases our profit margins and could limit our capacity to meet customer demand and delay new product development until a replacement facility and equipment, if necessary, were secured. The replacement of the manufacturing facility could take an extended amount of time before manufacturing operations could restart. The potential delays and costs resulting from these steps could have a material adverse effect on our business, financial condition and results of operations.

If we are unable to manufacture our products efficiently, our operating results could suffer.

We must continuously review and improve our manufacturing processes in an effort to maintain satisfactory manufacturing yields and product performance, to lower our costs and to otherwise remain competitive. As we manufacture more complex products, the risk of encountering delays or difficulties increases. The start-up costs

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associated with implementing new manufacturing technologies, methods and processes, including the purchase of new equipment, and any resulting manufacturing delays and inefficiencies, could negatively impact our results of operations.

If we need to add manufacturing capacity, an expansion of our existing manufacturing facility or establishment of a new facility could be subject to factory audits by our customers. Any delays or unexpected costs resulting from this audit process could adversely affect our net sales and results of operations. In addition, we cannot be certain that we would be able to increase our manufacturing capacity on a timely basis or meet the standards of any applicable factory audits.

We depend on third-parties to design and manufacture custom components for some of our products.

Significant customized components, such as ASICs, that are used in HyperCloud® and some of our other products are designed and manufactured by third parties. The ability and willingness of such third parties to perform in accordance with their agreements with us is largely outside of our control. If one or more of our design or manufacturing partners fails to perform its obligations in a timely manner or at satisfactory quality levels, our ability to bring products to market or deliver products to our customers, as well as our reputation, could suffer. In the event of any such failures, we may have no readily available alternative source of supply for such products, since, in our experience, the lead time needed to establish a relationship with a new design and/or manufacturing partner is at least 12 months, and the estimated time for our OEM customers to re-qualify our product with components from a new vendor ranges from four to nine months. If we need to replace one of our manufacturers, we may not be able to redesign, or cause to have redesigned, our customized components to be manufactured by the new manufacturer in a timely manner, and we could infringe on the intellectual property of our current design or manufacturing partner when we redesign the custom components or cause such components to be redesigned by the new manufacturer. A manufacturing disruption experienced by our manufacturing partners, the failure of our manufacturing partners to dedicate adequate resources to the production of our products, the financial instability of our manufacturing or design partners, or any other failure of our design or manufacturing partners to perform according to their agreements with us would have a material adverse effect on our business, financial condition and results of operations.

We have many other risks due to our dependence on third-party manufacturers, including: reduced control over delivery schedules, quality, manufacturing yields and cost; the potential lack of adequate capacity during periods of excess demand; limited warranties on products supplied to us; and potential misappropriation of our intellectual property. We are dependent on our manufacturing partners to manufacture products with acceptable quality and manufacturing yields, to deliver those products to us on a timely basis and to allocate a portion of their manufacturing capacity sufficient to meet our needs. Although our products are designed using the process design rules of the particular manufacturers, our manufacturing partners may not be able to achieve or maintain acceptable yields or deliver sufficient quantities of components on a timely basis or at an acceptable cost. Additionally, our manufacturing partners may not continue to devote adequate resources to produce our products or continue to advance the process design technologies on which the qualification and manufacturing of our products are based.

If our products do not meet the quality standards of our customers, we may be forced to stop shipments of products until the quality issues are resolved.

Our customers require our products to meet strict quality standards. Should our products not meet such standards, our customers may discontinue purchases from us until we are able to resolve the quality issues that are causing us to not meet the standards. Such “quality holds” could have a significant adverse impact on our revenues and operating results.

If our products are defective or are used in defective systems, we may be subject to warranty, product recalls or product liability claims.

If our products are defectively manufactured, contain defective components or are used in defective or malfunctioning systems, we could be subject to warranty and product liability claims and product recalls, safety alerts or advisory notices. While we have product liability insurance coverage, it may not be adequate to satisfy claims made against us. We also may be unable to obtain insurance in the future at satisfactory rates or in adequate amounts.

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Although we generally attempt to contractually limit our exposure to incidental and consequential damages, if these contract provisions are not enforced or are unenforceable or if liabilities arise that are not effectively limited, we could incur substantial costs in defending or settling product liability claims.

Warranty and product liability claims or product recalls, regardless of their ultimate outcome, could have an adverse effect on our business, financial condition and reputation, and on our ability to attract and retain customers. In addition, we may determine that it is in our best interest to accept product returns in circumstances where we are not contractually obligated to do so in order to maintain good relations with our customers. Accepting product returns may negatively impact our operating results.

If we are required to obtain licenses to use third-party intellectual property and we fail to do so, our business could be harmed.

Although some of the components used in our final products contain the intellectual property of third parties, we believe that our suppliers bear the sole responsibility to obtain any rights and licenses to such third-party intellectual property. While we have no knowledge that any third-party licensor disputes our belief, we cannot assure you that disputes will not arise in the future. The operation of our business and our ability to compete successfully depends significantly on our continued operation without claims of infringement or demands resulting from such claims, including demands for payments of money in the form of, for example, ongoing licensing fees.

We are also developing new products that we intend to launch in new customer markets. Similar to our current products, we may use components in these new products that contain the intellectual property of third parties. While we plan to exercise precautions to avoid infringing on the intellectual property rights of third parties, disputes regarding intellectual property ownership could arise.

If it is determined that we are required to obtain inbound licenses and we fail to obtain licenses, or if such licenses are not available on economically feasible terms, then we would be forced to redesign the applicable product without the infringing component, which may be costly or not possible, or we may be forced to cease all manufacture and sales of the applicable product. Any such outcome would harm our business, operating results and financial condition.

The flash memory market is constantly evolving and competitive, and we may not have rights to manufacture and sell certain types of products utilizing emerging flash formats, or we may be required to pay a royalty to sell products utilizing these formats.



The flash-based storage market is constantly undergoing rapid technological change and evolving industry standards. Many consumer devices, such as digital cameras, PDAs and smartphones, are transitioning to emerging flash memory formats, such as the Memory Stick and xD Picture Card formats, which we do not currently manufacture and do not have rights to manufacture. Although we do not currently serve the consumer flash market, it is possible that certain OEMs may choose to adopt these higher-volume, lower-cost formats. This could result in a decline in demand, on a relative basis, for other products that we manufacture, such as CompactFlash, SD and embedded USB drives. If we decide to manufacture flash memory products utilizing emerging formats, we would be required to secure licenses to give us the right to manufacture such products that may not be available at reasonable rates or at all. If we are not able to supply flash card formats at competitive prices or if we were to have product shortages, our net sales could be adversely impacted and our customers would likely cancel orders or seek other suppliers to replace us.

Our indemnification obligations for the infringement by our products of the intellectual property rights of others could require us to pay substantial damages.

As is common in our industry, we have in effect a number of agreements in which we have agreed to defend, indemnify and hold harmless our customers and suppliers from damages and costs that may arise from the infringement by our products of third-party patents, trademarks or other proprietary rights. The scope of such indemnity varies, but may, in some instances, include indemnification for damages and expenses, including attorneys' fees. Our insurance

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does not cover intellectual property infringement. The term of these indemnification agreements is generally perpetual after execution of the applicable agreement. The maximum potential amount of future payments we could be required to make under these indemnification agreements is unlimited. We may periodically have to respond to claims and litigate these types of indemnification obligations. Although our suppliers may bear responsibility for the intellectual property inherent in the components they sell to us, they may lack the financial ability to stand behind such indemnities. Additionally, it may be costly to enforce any indemnifications that they have granted to us. Accordingly, any indemnification claims by customers could require us to incur significant legal fees and could potentially result in the payment of substantial damages, either of which could result in a material adverse effect on our business and results of operations.

We depend on a few key employees, and if we lose the services of any of these employees or are unable to attract and retain other qualified personnel, our business could be harmed.

To date, we have been highly dependent on the experience, relationships and technical knowledge of certain key employees. We believe that our future success will be dependent on our ability to retain the services of these key employees, develop their successors, reduce our reliance on them, and properly manage the transition of their roles should departures occur. The loss of these key employees or their inability to provide their services could delay the development and introduction of, and negatively impact our ability to sell, our products and otherwise harm our business. We do not have employment agreements with any of these key employees other than Chun K. Hong, our President, Chief Executive Officer and Chairman of the Board. We maintain “Key Man” life insurance on Chun K. Hong; however, we do not carry “Key Man” life insurance on any of our other key employees.

Our future success also depends on our ability to attract, retain and motivate highly skilled engineering, manufacturing, and other technical and sales personnel. Competition for experienced personnel is intense. We may not be successful in attracting new engineers or other technical personnel or in retaining or motivating our existing personnel. If we are unable to hire and retain engineers with the skills necessary to keep pace with the evolving technologies in our markets, our ability to continue to provide our current products and to develop new or enhanced products will be negatively impacted, which would harm our business. In addition, a general shortage of experienced engineers could lead to increased recruiting, relocation and compensation costs for such engineers, which may exceed our expectations and resources. These increased costs may make hiring new engineers difficult or may increase our operating expenses.

Historically, a significant portion of our workforce has consisted of contract personnel. We invest considerable time and expense in training these contract employees. We may experience high turnover rates in our contract employee workforce, which may require us to expend additional resources in the future. If we convert any of these contract employees into permanent employees, we may have to pay finder’s fees to the contract agency.

We rely on third-party manufacturers’ representatives to sell our products and the failure of these manufacturers’ representatives to perform as expected could reduce our sales.

We sell some of our products to customers through manufacturers' representatives. We are unable to predict the extent to which our manufacturers' representatives will be successful in marketing and selling our products. Moreover, many of our manufacturers' representatives also market and sell other, potentially competing products. Our representatives may terminate their relationships with us at any time. Our future performance will also depend, in part, on our ability to attract additional manufacturers' representatives that will be able to market and support our products effectively, especially in markets in which we have not previously distributed our products. If we cannot retain our current manufacturers' representatives or recruit additional or replacement manufacturers' representatives, our sales and operating results will be harmed.

Economic, political and other risks associated with international sales and operations expose us to significant risks.

Since 2009, most of our world-wide manufacturing production has been performed at our manufacturing facility in the People's Republic of China, or PRC. Language and cultural differences, as well as the geographic distance from our headquarters in Irvine, California, further compound the difficulties of running a manufacturing operation in

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the PRC. Our management has limited experience in creating or overseeing foreign operations, and the ongoing management of our PRC facility may require our management team to divert substantial amounts of their time, particularly if we encounter operational difficulties or manufacturing disruptions at our PRC facility. We may not be able to maintain control over product quality, delivery schedules, manufacturing yields and costs. Furthermore, the costs related to having excess capacity have in the past and may in the future continue to have an adverse impact on our gross margins and operating results.

We manage a local workforce that may subject us to regulatory uncertainties. Changes in the labor laws of the PRC could increase the cost of employing the local workforce. The increased industrialization of the PRC, as well as general economic and political conditions in the PRC, could also increase the price of local labor. Any or all combination of these factors could negatively impact the cost savings we currently enjoy from having our manufacturing facility in the PRC.

Economic, political and other risks associated with international sales and operations could adversely affect our net sales.

Part of our growth strategy involves making sales to foreign corporations and delivering our products to facilities located in foreign countries. To facilitate this process and to meet the long-term projected demand for our products, we have established a manufacturing facility in the PRC, which performs most of our worldwide manufacturing production. Selling and manufacturing in foreign countries subjects us to additional risks not present with our domestic operations, as we are operating in business and regulatory environments in which we have limited previous experience. Further, the geographic distance from our headquarters in Irvine, California, compounds the difficulties of running a manufacturing operation in the PRC. We will need to continue to overcome language and cultural barriers to effectively conduct our operations in these environments. Changes in the labor laws of the PRC could increase the cost of employing the local workforce. The increased industrialization of the PRC, as well as general economic and political conditions in the PRC, could also increase the price of local labor. Any of these factors could negatively impact the cost savings we experience from locating our manufacturing facility in the PRC. Our management has limited experience creating or overseeing foreign operations, and the ongoing management of our PRC facility may require our management team to divert substantial amounts of their time, particularly if we encounter operational difficulties or manufacturing disruptions at our PRC facility. We may not be able to maintain control over product quality, delivery schedules, manufacturing yields and costs.

In addition, the economies of the PRC and other countries have been highly volatile in the past, resulting in significant fluctuations in local currencies and other instabilities. These instabilities affect a number of our customers and suppliers in addition to our own foreign operations.

In the future, some of our net sales may be denominated in Chinese Renminbi (“RMB”). The Chinese government controls the procedures by which RMB is converted into other currencies, and conversion of RMB generally requires government consent. As a result, RMB may not be freely convertible into other currencies at all times. If the Chinese

government institutes changes in currency conversion procedures, or imposes restrictions on currency conversion, those actions may negatively impact our operations and could reduce our operating results. In addition, fluctuations in the exchange rate between RMB and U.S. dollars may adversely affect our expenses and results of operations as well as the value of our assets and liabilities. These fluctuations may also adversely affect the comparability of our period-to-period results. If we decide to declare dividends and repatriate funds from our Chinese operations, we will be required to comply with the procedures and regulations of applicable Chinese law. Any changes to these procedures and regulations, or our failure to comply with these procedures and regulations, could prevent us from making dividends and repatriating funds from our Chinese operations, which could adversely affect our financial condition. If we are able to make dividends and repatriate funds from our Chinese operations, these dividends would be subject to U.S. corporate income tax.

International turmoil and the threat of future terrorist attacks, both domestically and internationally, have contributed to an uncertain political and economic climate, both in the U.S. and globally, and have negatively impacted the worldwide economy. The occurrence of one or more of these instabilities could adversely affect our foreign operations and some of our customers or suppliers, which could adversely affect our net sales. In addition, our failure to

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meet applicable regulatory requirements or overcome cultural barriers could result in production delays and increased turn-around times, which would adversely affect our business.

Our international sales are subject to other risks, including regulatory risks, tariffs and other trade barriers, timing and availability of export licenses, political and economic instability, difficulties in accounts receivable collections, difficulties in managing distributors, lack of a significant local sales presence, difficulties in obtaining governmental approvals, compliance with a wide variety of complex foreign laws and treaties and potentially adverse tax consequences. In addition, the U.S. or foreign countries may implement quotas, duties, taxes or other charges or restrictions upon the importation or exportation of our products, leading to a reduction in sales and profitability in that country.

Our operations could be disrupted by power outages, natural disasters or other factors.

Due to the geographic concentration of our manufacturing operations in our PRC facility and the operations of certain of our suppliers, a disruption resulting from equipment failure, power failures, quality control issues, human error, government intervention or natural disasters, including earthquakes and floods, could interrupt or interfere with our manufacturing operations and consequently harm our business, financial condition and results of operations. Such disruptions would cause significant delays in shipments of our products and adversely affect our operating results. In July 2014, our PRC facility suffered water damage as a result of heavy rain and floods, which forced us to temporarily halt manufacturing at the facility while necessary repairs or replacements were made to the facility and to certain of our manufacturing equipment. This incident caused us to incur additional expenses as we shifted our manufacturing activities to a third-party manufacturing facility in the PRC to enable us to mitigate the disruption in shipments to our customers. While we believe we have contained the disruptions we expect that our relationships with our key customers could be materially harmed if we incur additional manufacturing disruptions in the future. While we were able to favorably resolve our claim with our insurance carrier, similar events could occur in the future and, in such event, we may not be able to secure alternative manufacturing capabilities if manufacturing at our PRC facility is disrupted.

Difficulties with our global information technology systems and/or unauthorized access to such systems, could harm our business.

Any failure or malfunctioning of our global information technology system, errors or misuse by system users, difficulties in migrating standalone systems to our centralized systems, or inadequacy of the system in addressing the needs of our operations could disrupt our ability to timely and accurately manufacture and ship products, which could have a material adverse effect on our business, financial condition and results of operations. Any such failure, errors, misuse or inadequacy could also disrupt our ability to timely and accurately process, report and evaluate key operations metrics and key components of our results of operations, financial position and cash flows. Any such disruptions would likely divert our management and key employees' attention away from other business matters. Any disruptions or difficulties that may occur in connection with our global information technology system could also

adversely affect our ability to complete important business process, such as maintenance of our disclosure controls and procedures and evaluation of our internal control over financial reporting and attestation activities pursuant to Section 404 of the Sarbanes-Oxley Act of 2002.

In connection with our daily business transactions, we store data about our business, including certain customer data, on our global information technology systems. While our systems are designed with security measures to prevent unauthorized access, third parties may gain unauthorized access to our systems. This unauthorized be the result of intentional misconduct by computer hackers, employee error, employee malfeasance or other causes. Additionally, third parties may attempt to fraudulently induce employees or customers into disclosing sensitive information such as user names, passwords or other information in order to gain access to our information technology system for the purpose of sabotage or to access our data, including our and our customers' intellectual property and other confidential business information. Because the techniques used to obtain unauthorized access to information technology systems evolve frequently and generally are not recognized until successful, we may be unable to anticipate these techniques or to implement adequate preventative measures. Any security breach could result in disruption to our business, misappropriation or loss of data, loss of confidence in us by our customers, damage to our reputation, legal liability and a negative impact on our sales.

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Our failure to comply with environmental laws and regulations could subject us to significant fines and liabilities or cause us to incur significant costs.

We are subject to various and frequently changing U.S. federal, state and local and foreign governmental laws and regulations relating to the protection of the environment, including those governing the discharge of pollutants into the air and water, the management and disposal of hazardous substances and wastes, the cleanup of contaminated sites and the maintenance of a safe workplace. In particular, some of our manufacturing processes may require us to handle and dispose of hazardous materials from time to time. For example, in the past our manufacturing operations have used lead-based solder in the assembly of our products. Today, we use lead-free soldering technologies in our manufacturing processes, as this is required for products entering the European Union. We could incur substantial costs, including clean-up costs, civil or criminal fines or sanctions and third-party claims for property damage or personal injury as a result of violations of, or noncompliance with, environmental laws and regulations. Although we have not incurred significant costs to date to comply with these laws and regulations, new laws or changes to current laws and regulations to make them more stringent could require us to incur significant costs to remain in compliance.

Regulations related to “conflict minerals” may cause us to incur additional expenses and could limit the supply and increase the cost of certain metals used in manufacturing our products.

In August 2012, the SEC adopted a rule requiring disclosure of specified minerals, known as conflict materials, that are necessary to the functionality or production of products manufactured or contracted to be manufactured by public companies. The rule requires companies to verify and disclose whether or not such minerals originate from the Democratic Republic of Congo or an adjoining country. To comply with this rule, we are required to conduct a reasonable country of origin inquiry each year and, depending on the results of that inquiry, we may be required to exercise due diligence on the source and chain of custody of conflict minerals contained in our products. Such due diligence must conform to a nationally or internationally recognized due diligence framework. We are required to file a disclosure report with the SEC in May of each year relating to the preceding calendar year. In addition, commencing with the disclosure report relating to the 2015 calendar year, to the extent that we are required to exercise due diligence on the source and chain of custody of conflict minerals, we will be required to obtain an independent private sector audit of our disclosure report and underlying due diligence measures.

The due diligence activities required to determine the source and chain of custody of minerals contained in our products are time consuming and may result in significant costs. Due to the size and complexity of our supply chain, we face significant challenges in verifying the origins of the minerals used in our products. Further, this rule could affect the availability in sufficient quantities and at competitive prices of certain minerals used in the manufacture of our products, including tantalum, tin, gold and tungsten. There may be only limited number of sources of “conflict-free” minerals, which could result in increased material and component costs, as well as additional costs associated with potential changes to our products, processes or sources of supply.



If we are unable to sufficiently verify the origin of the minerals used in our products through the due diligence measures that we implement, or if we are unable to obtain an audit report each year that concludes that our due diligence measures are in conformity with the criteria set forth in the relevant due diligence framework, our reputation could be harmed. In addition, we may not be able to satisfy customers who require that our products be certified as “conflict-free,” which could place us at a competitive disadvantage.

Our internal controls over financial reporting may not be effective, which could have a significant and adverse effect on our business.

Section 404 of the Sarbanes-Oxley Act of 2002 and the related rules and regulations of the SEC, which we collectively refer to as Section 404, require us to evaluate our internal controls over financial reporting to allow management to report on these internal controls as of the end of each year. Effective internal controls are necessary for us to produce reliable financial reports and are important in our effort to prevent financial fraud. In the course of our Section 404 evaluations, we may identify conditions that may result in significant deficiencies or material weaknesses and we may conclude that enhancements, modifications or changes to our internal controls are necessary or desirable.

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Implementing any such changes would divert the attention of our management, could involve significant costs, and may negatively impact our results of operations.

We note that there are inherent limitations on the effectiveness of internal controls, as they cannot prevent collusion, management override or failure of human judgment. If we fail to maintain an effective system of internal controls or if management or our independent registered public accounting firm were to discover material weaknesses in our internal controls, we may be unable to produce reliable financial reports or prevent fraud, which could harm our financial condition and results of operations, result in a loss of investor confidence and negatively impact our stock price.

If we do not effectively manage any future growth we may experience, our resources, systems and controls may be strained and our results of operations may suffer.

Any future growth we may experience could strain our resources, management, information and telecommunication systems and operational and financial controls. To manage future growth effectively, including any expansion of volume in our manufacturing facility in the PRC, we must be able to improve and expand our systems and controls. We may not be able to do this in a timely or cost-effective manner, and our current systems and controls may not be adequate to support our future operations. In addition, our officers have relatively limited experience in managing a rapidly growing business. As a result, they may not be able to provide the guidance necessary to manage future growth or maintain future market position. Any failure to manage any growth we may experience or improve or expand our existing systems and controls, or unexpected difficulties in doing so, could harm our business.

If we acquire businesses or technologies or pursue other strategic transactions in the future, these transactions could disrupt our business and harm our operating results and financial condition.

We will evaluate opportunities to acquire businesses or technologies or pursue other strategic transactions, including collaboration or joint development arrangements such as our JDLA with Samsung, that might complement our current product offerings or enhance our intellectual property portfolio or technical capabilities. We have no experience in acquiring other businesses or technologies. Acquisitions and other strategic transactions entail a number of risks that could adversely affect our business and operating results, including, among others:

- difficulties in integrating the operations, technologies or products of acquired companies or working with third parties with which we may partner on joint development or collaboration relationships;
- the diversion of management's time and attention from the normal daily operations of the business;

- insufficient increases in net sales to offset increased expenses associated with the acquisitions or strategic transaction;
- difficulties in retaining business relationships with suppliers and customers;
- over-estimation of potential synergies or a delay in realizing those synergies;
- entering markets in which we have no or limited experience and in which competitors have stronger market positions; and
- the potential loss of key employees of our or any acquired companies.

Future acquisitions or other strategic transactions also could cause us to incur debt or be subject to contingent liabilities. In addition, acquisitions could cause us to issue equity or debt securities that could dilute the ownership interests of our existing stockholders or increase our leverage relative to our earnings or to our equity capitalization. Furthermore, acquisitions or other strategic transactions may result in material charges or adverse tax consequences, substantial depreciation, deferred compensation charges, in-process research and development charges, the amortization

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of amounts related to deferred stock-based compensation expense and identifiable purchased intangible assets or impairment of goodwill, any or all of which could negatively affect our results of operations.

Risks Related to Our Common Stock

Our results of operations fluctuate significantly and are difficult to predict, and any failure to meet investor or analyst expectations of our performance could cause the price of our common stock to decline.

Our operating results have varied significantly in the past and will continue to fluctuate from quarter-to-quarter or year-to-year in the future due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these quarterly and annual fluctuations include, among other, those described in the risk factors in this Item 1A. Due to the various factors described herein and others, the results of any prior quarterly or annual periods should not be relied upon as an indication of our future operating performance. If our quarterly results of operations fall below the expectations of securities analysts or investors, the price of our common stock could decline substantially. As a result of the significant fluctuations of our operating results in prior periods, period-to-period comparisons of our operating results may not be meaningful and investors in our common stock should not rely on the results of any one quarter as an indicator of future performance.

Our principal stockholders have significant voting power and may take actions that may not be in the best interest of our other stockholders.

As of February 29, 2016, approximately 11.6% of our outstanding common stock was held by affiliates, including 10.4% held by Chun K. Hong, our Chief Executive Officer and Chairman of our board of directors. As a result, Mr. Hong has the ability to exert substantial influence over all matters requiring approval by our stockholders, including the election and removal of directors and any proposed merger, consolidation or sale of all or substantially all of our assets and other corporate transactions. This concentration of control could be disadvantageous to other stockholders with interests different from those of Mr. Hong.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control and could also limit the market price of our stock.

Our certificate of incorporation and bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. In addition, these provisions could limit the price that investors would be willing to pay in the future for shares of our common stock. The following are examples of provisions which are included in our certificate of incorporation and bylaws, each as

amended:

- our board of directors is authorized, without prior stockholder approval, to designate and issue preferred stock, commonly referred to as “blank check” preferred stock, with rights senior to those of our common stock;
- stockholder action by written consent is prohibited;
- nominations for election to our board of directors and the submission of matters to be acted upon by stockholders at a meeting are subject to advance notice requirements; and
- our board of directors is expressly authorized to make, alter or repeal our bylaws.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These and other provisions in our certificate of incorporation and bylaws and of Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors, including delaying or impeding a merger, tender offer, or proxy contest or other change of control transaction involving our company. Any delay or prevention of a change of control transaction

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or changes in our board of directors could prevent the consummation of a transaction in which our stockholders could receive a substantial premium over the then-current market price for their shares.

We do not currently intend to pay dividends on our common stock, and any return to investors is expected to come, if at all, only from potential increases in the price of our common stock.

We intend to use all available funds to finance our operations. Accordingly, while payment of dividends rests within the discretion of our board of directors, no cash dividends on our common shares have been declared or paid by us in the past and we have no intention of paying any such dividends in the foreseeable future. Any return to investors is expected to come, if at all, only from potential increases in the price of our common stock.

The price of and volume in trading of our common stock has and may continue to fluctuate significantly.

Our common stock has been publicly traded since November 2006. The price of our common stock and the trading volume of our shares are volatile and have in the past fluctuated significantly. This volatility could continue and an active trading market in our common stock may never develop or be sustained. The market price at which our common stock trades may be influenced by many factors, including, among others, the following:

- our operating and financial performance and prospects, including our ability to achieve and sustain profitability in the future;
- investor perception of us and the industry in which we operate;
- the availability and level of research coverage of and market making in our common stock;
- results of litigation;
- changes in earnings estimates or buy/sell recommendations by analysts;
- sales of newly issued common stock or other securities associated with our registration statement on Form S-3, or the perception that such sales may occur;
- general financial and other market conditions; and
- changing and recently volatile domestic and international economic conditions.

In addition, shares of our common stock and the public stock markets in general have experienced, and may continue to experience, extreme price and trading volume volatility. These fluctuations may adversely affect the market price of our common stock and a stockholder's ability to sell its shares into the market at the desired time or at the desired price.

In 2007, following a drop in the market price of our common stock, securities litigation was initiated against us. Given the historic volatility of our industry, we may become engaged in this type of litigation in the future. Securities litigation, like other types of litigation that are discussed above, is expensive and time-consuming and could subject us to unfavorable results.

We may not be able to maintain our NASDAQ listing.

During 2015 and into early 2016, we experienced periods in which we were not compliant with the continued listing standards of The NASDAQ Global Market. As a result of a compliance process, we transferred the listing of our common stock from The NASDAQ Global Market tier to The NASDAQ Capital Market tier. On February 10, 2016, we received a compliance letter from The NASDAQ Stock Market notifying us that we had regained compliance with the applicable requirements for continued listing on The NASDAQ Stock Market. Our common stock continues to trade on

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The NASDAQ Capital Market tier under the symbol “NLST.” Notwithstanding our current compliance, there can be no assurance that we will continue to comply with the applicable continued listing standards of The NASDAQ Capital Market. If we are delisted from The NASDAQ Capital Market, the liquidity of our common stock may be impaired, which could reduce the trading value of our common stock.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 2. Properties

Our corporate headquarters is located in approximately 8,203 square feet of space in Irvine, California, under a lease that expires in October 2016. We also currently lease approximately 42,200 square feet of space for our manufacturing facility in the PRC under a lease that expires in March 2017.

We believe that our current facilities are adequate for our current and expected operations for the next twelve months and that additional space could be obtained if needed.

Item 3. Legal Proceedings

The information under the heading “ Litigation and Patent Reexaminations” in Note 7 to our consolidated financial statements included in Part II, Item 8 of this report is incorporated herein by reference.

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

Our common stock began trading on The NASDAQ Global Market tier under the trading symbol "NLST" on November 30, 2006. As of January 14, 2016, our common stock commenced trading on The NASDAQ Capital Market tier. The following table sets forth the high and low sale prices for our common stock on the NASDAQ Global Market tier for the periods indicated:

	High	Low
Year Ended January 2, 2016		
Fourth Quarter	\$ 1.10	\$ 0.35
Third Quarter	0.60	0.28
Second Quarter	0.76	0.50
First Quarter	2.09	0.52
Year Ended December 27, 2014		
Fourth Quarter	\$ 1.23	\$ 0.57
Third Quarter	1.59	0.95
Second Quarter	2.15	0.93
First Quarter	2.41	0.70

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### Holders

As of February 29, 2016 there were approximately 7 holders of record of our shares of common stock, plus an indeterminate number of additional stockholders whose shares of our common stock are held on their behalf by brokerage firms or other agents.

### Recent Sales of Unregistered Securities

On November 18, 2015, we issued to a law firm a warrant to purchase up to 300,000 shares of our common stock at an exercise price per share of \$0.64, and on November 20, 2015, we issued to another law firm a warrant to purchase up to 60,000 shares of our common stock at an exercise price per share of \$0.45. Each such warrant has a term of ten years and was issued as partial consideration for legal services rendered. Neither the warrants nor the common stock issuable upon exercise of the warrants have been registered under the Securities Act of 1933, as amended (the "Securities Act"). These securities were sold and issued in reliance on an exemption from the registration requirements of the Securities Act afforded by Section 4(a)(2) thereof in reliance on the following facts: we did not use general solicitation or advertising to market or sell the securities; each warrant holder represented to us that it was an accredited investor (as that term is defined in Rule 501 of Regulation D under the Securities Act) and that it was acquiring the securities with the present intention of holding them for purposes of investment and not with a view to their public resale or distribution within the meaning of the Securities Act; and the securities were issued as restricted securities.

### Dividend Policy

We have never declared or paid cash dividends on our capital stock. Our credit facility with SVB prohibits the payment of cash dividends. Accordingly, we do not anticipate declaring or paying cash dividends on our capital stock in the foreseeable future. Any payments of cash dividends will be at the discretion of our board of directors, and will depend upon our results of operations, earnings, capital requirements, legal and contractual restrictions, and other factors deemed relevant by our board of directors.

### Item 6. Selected Financial Data

Not applicable.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our audited consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K.

This discussion and analysis contains forward-looking statements regarding future events and our future performance. These forward-looking statements involve risks and uncertainties that could cause actual results to differ materially and adversely from those expressed in any forward-looking statement. These risks and uncertainties include, among others, risks associated with the launch and commercial success of our products, programs and technologies; the success of product, licensing and joint development partnerships; continuing development, qualification and volume production of HyperVault, EXPRESSvault™, NVvault™, HyperCloud® and VLP Planar-X RDIMM; the timing and magnitude of the continued decrease in our sales; our ability to leverage our NVvault™ and EXPRESSvault™ technology into a more diverse customer base; our need to raise additional capital and our ability to obtain financing when necessary; the rapidly-changing nature of technology; risks associated with intellectual property, including patent infringement litigation against us as well as the costs and unpredictability of litigation over infringement of our intellectual property and the possibility of our patents being reexamined or reviewed by the U.S. Patent and Trademark Office (“USPTO”) and Patent Trial and Appeal Board (“PTAB”); volatility in the pricing of DRAM ICs and NAND flash; changes in and uncertainty of customer acceptance of, and demand for, our existing products and products under development, including uncertainty of and/or delays in product orders and product qualifications; delays in our and our customers’ product releases and development; introductions of new products by competitors; changes in end-user demand for technology solutions; our ability to attract and retain skilled personnel; our reliance on suppliers of critical components and vendors in the supply chain; fluctuations in the market price of critical components; evolving industry standards; the political and regulatory environment in the PRC; and general economic and market conditions. Other risks and uncertainties are described under the heading “Risk Factors” in Part I, Item IA of this Annual Report on Form 10-K. Except as required by law, we undertake no obligation to revise or update publicly any forward-looking statements for any reason.

Overview

We design, manufacture and sell a wide variety of high-performance, logic-based memory subsystems for the global datacenter, storage and high-performance computing markets. Our memory subsystems consist of combinations of dynamic random access memory integrated circuits (“DRAM ICs” or “DRAM”), NAND flash memory (“NAND flash”), application-specific integrated circuits (“ASICs”) and other components assembled on printed circuit boards (“PCBs”). We primarily market and sell our products to leading original equipment manufacturer (“OEM”) customers, hyperscale datacenter operators and storage vendors. Our solutions are targeted at applications where memory plays a key role in meeting system performance requirements. We leverage a portfolio of proprietary technologies and design techniques, including combining discrete semiconductor technologies from third parties such as DRAM and NAND flash to function as one, efficient planar design, and alternative packaging techniques to deliver memory subsystems with persistence, high density, small form factor, high signal integrity, attractive thermal characteristics, reduced power consumption and low cost per bit. Our NVvault™ product is the first to offer both DRAM and NAND flash in a standard

form factor memory subsystem as a persistent dual-in line memory module (“DIMM”) in mission critical applications. Our HyperCloud® technology incorporates our patented rank multiplication and load reduction technologies. We also have pending and issued patents covering fundamental aspects of hybrid memory DIMM designs that incorporate combinations of DRAM and/or NAND flash, such as our NVvault™ product. We are focused on monetizing our patent portfolio through our products business and, where appropriate, through licensing arrangements with third parties that wish to incorporate our patented technologies in their products.

Our high-performance memory subsystems are developed in part using our proprietary technologies, and we believe that the strength of our intellectual property rights will be important to the success of our business. We utilize patent and trade secret protection, confidentiality agreements with customers and partners, disclosure and invention assignment agreements with employees and consultants and other contractual provisions to protect our intellectual property and other proprietary information. We also intend to seek opportunities to monetize our intellectual property through joint development or licensing arrangements and to vigorously defend our intellectual property rights, which

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may include, when necessary, launching enforcement actions against entities we believe are using our patented solutions in their products. We may seek injunctive relief in the course of enforcing our intellectual property rights in certain instances, and in other instances we may enter into settlement or license agreements, which can be structured in a variety of ways, including one-time paid up licenses or ongoing royalty arrangements. We aim to generate a portion of our revenues with these types of licensing arrangements, but our efforts to monetize our intellectual property rights and technologies may not be successful.

## Recent Developments

On November 12, 2015, we entered into a Joint Development and License Agreement (“JDLA”) with Samsung Electronics Co., Ltd. (“Samsung”), pursuant to which we agreed to work together to jointly develop a standardized product interface for NVDIMM-P memory modules in order to facilitate broad industry adoption of this new technology. We received \$8.0 million of non-recurring engineering fees (NRE) from Samsung for the joint development. The JDLA includes a Right of First Refusal wherein we will provide Samsung the right to acquire our NVDIMM-P technology in a separate, subsequent transaction before we offer the technology to a third party. Both parties may enter into an additional agreement in the future for Samsung to be granted commercial license for our NVDIMM-P technology. The JDLA also includes cross licensing of each party’s respective patent portfolios, as well as access to raw materials (DRAM and NAND flash) at competitive prices, and an important strategic partner that can facilitate getting our HyperVault technology to market.

On November 18, 2015 (“Closing Date”), we also entered into a Senior Secured Convertible Promissory Note and Warrant Purchase Agreement (“SVIC Purchase Agreement”), with SVIC No. 28 New Technology Business Investment L.L.P., a Korean limited liability partnership (“SVIC”) and an affiliate of Samsung Venture Investment Co., pursuant to which we sold SVIC a Senior Secured Convertible Promissory Note (“SVIC Note”) and a Stock Purchase Warrant (“SVIC Warrant”), each dated as of the Closing Date. The SVIC Note has an original principal amount of \$15.0 million, accrues interest at a rate of 2% per year, is due and payable in full on December 31, 2021 (“SVIC Note Maturity Date”) and the principal and accrued but unpaid interest of which are convertible into shares of our Common Stock at a conversion price of \$1.25 per share (the “Conversion Price”), subject to certain adjustments as set forth therein on the SVIC Note Maturity Date. Upon a change of control prior to the SVIC Note Maturity Date, the SVIC Note may, at our option, be assumed by the surviving entity or be redeemed upon the consummation of such change of control for the principal and accrued but unpaid interest as of the redemption date. The SVIC Warrant grants SVIC a right to purchase 2,000,000 shares of our common stock at an exercise price of \$0.30 per share, subject to certain adjustments as set forth therein, is only exercisable in the event we exercise our right to redeem the SVIC Note prior to the SVIC Note Maturity Date and expires on December 31, 2025. In connection with the SVIC Note, SVIC was granted a first priority security interest in our patents and a second priority security interest in all of our other assets. On the Closing Date, we, Silicon Valley Bank (“SVB”) and SVIC entered into an Intercreditor Agreement in connection with the SVIC Note pursuant to which SVB and SVIC agreed to their relative security interest priorities in our assets. On the Closing Date, we and SVIC also entered into a Registration Rights Agreement pursuant to which we are obligated to register with the SEC the shares of Common Stock issued upon conversion of the SVIC Note or upon exercise of the SVIC Warrant.

On November 19, 2015, pursuant to the terms of a payoff letter (the “Payoff Letter”), the Company repaid all sums due under the 2013 Loan Agreement with Fortress Credit Opportunities I LP (“Fortress”), an affiliate of Fortress Investment Group LLC and successor to DBD Credit Funding, LLC, and terminated the 2013 Loan Agreement in full. Pursuant to the Payoff Letter, the parties also terminated the Monetization Letter Agreement (as amended, the “Letter Agreement”), dated July 18, 2013, by and between us and Drawbridge Special Opportunities Fund LP. In connection with the Payoff Letter, we made a lump sum payment of \$1.0 million to Fortress as an early termination fee, and agreed to amend the outstanding warrant issued in connection with the entry of the 2013 Loan Agreement and Letter Agreement to reduce the exercise price per share to \$0.47. Additionally, pursuant to the Payoff Letter, we issued to Fortress a new ten-year warrant to purchase 1,000,000 shares of our Common Stock with an exercise price per share of \$0.47.

#### Key Business Metrics

The following describes certain line items in our consolidated statements of operations that are important to management’s assessment of our financial performance:

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Net Product Sales.

Net product sales consist primarily of sales of our high performance memory subsystems, net of a provision for estimated returns under our right of return policies, which generally range up to 30 days. We generally do not have long-term sales agreements with our customers. Although OEM customers typically provide us with non-binding forecasts of future product demand over specific periods of time, they generally place orders with us approximately two weeks in advance of scheduled delivery. Selling prices are typically negotiated monthly, based on competitive market conditions and the current price of DRAM ICs and NAND flash. Purchase orders generally have no cancellation or rescheduling penalty provisions. We often ship our products to our customers' international manufacturing sites. All of our sales to date, however, are denominated in U.S. dollars. We also sell excess component inventory of DRAM ICs and NAND flash to distributors and other users of memory ICs. Component inventory sales are a relatively small percentage of net sales as a result of our efforts to diversify both our customer and product line bases. This diversification effort has also allowed us to use components in a wider range of memory subsystems. We expect that component inventory sales will continue to represent a minimal portion of our net sales in future periods.

Engineering Services.

We provide engineering services to our customers. We recognize revenue from these services when all of the following conditions are met: (1) evidence existed of an arrangement with the customer, typically consisting of a purchase order or contract; (2) our services were performed and risk of loss passed to the customer; (3) we completed all of the necessary terms of the contract; (4) the amount of revenue to which we were entitled was fixed or determinable; and (5) we believed it was probable that we would be able to collect the amount due from the customer. To the extent that one or more of these conditions has not been satisfied, we defer recognition of revenue.

Generally, we recognize revenue as the engineering services stipulated under the contract are completed and accepted by our customers. Engineering services are performed under a signed Statement of Work ("SOW") with a customer. The deliverables and payment terms stipulated under the SOW provide guidance on the project revenue recognition.

Revenues from contracts with substantive defined milestones that we have determined are reasonable, relevant to all the deliverables and payment terms in the SOW that are commensurate with the efforts required to achieve the milestones are recognized under the milestone recognition method.

Estimated losses on all SOW projects are recognized in full as soon as they become evident.



Cost of Sales.

Our cost of sales includes the cost of materials, labor and other manufacturing costs, depreciation and amortization of equipment, inventory valuation provisions, stock-based compensation, and occupancy costs and other allocated fixed costs. The DRAM ICs and NAND flash incorporated into our products constitute a significant portion of our cost of sales, and thus our cost of sales will fluctuate based on the current price of DRAM ICs and NAND flash. We attempt to pass through such DRAM IC and NAND flash memory cost fluctuations to our customers by frequently renegotiating pricing prior to the placement of their purchase orders. However, the sales prices of our memory subsystems can also fluctuate due to competitive situations unrelated to the pricing of DRAM ICs and NAND flash, which affects gross margins. In addition, we have experienced shortages of DRAM and flash required for our HyperCloud® and NVvault products from time to time, which can cause disruptions in our revenues and gross profits. In addition, the gross margin on our sales of any excess component DRAM IC and NAND flash inventory is much lower than the gross margin on our sales of our memory subsystems. As a result, fluctuations in DRAM IC and NAND flash inventory sales as a percentage of our overall sales could impact our overall gross margin. We assess the valuation of our inventories on a quarterly basis and record a provision to cost of sales as necessary to reduce inventories to the lower of cost or net realizable value.

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Research and Development.

Research and development expense consists primarily of employee and independent contractor compensation and related costs, stock based compensation, non-recurring engineering fees, computer aided design software licenses, reference design development costs, depreciation or rental of evaluation equipment, and occupancy and other allocated overhead costs. Also included in research and development expense are the costs of material and overhead related to the production of engineering samples of new products under development or products used solely in the research and development process. Our customers typically do not separately compensate us for design and engineering work involved in developing application specific products for them. All research and development costs are expensed as incurred. We anticipate that research and development expenditures will increase in future periods as we seek to expand new product opportunities, increase our activities related to new and emerging markets and continue to develop additional proprietary technologies.

Intellectual Property Legal Fees.

Intellectual property legal fees consists of legal fees incurred for patent filings and protection. We anticipate that intellectual property legal fees will increase in future periods as we seek to protect our patent portfolio.

Selling, General and Administrative.

Selling, general and administrative expenses consist primarily of employee salaries and related costs, stock-based compensation, independent sales representative commissions, professional services, promotional and other selling and marketing expenses, and occupancy and other allocated overhead costs. A significant portion of our selling effort is directed at building relationships with OEMs and other customers and working through the product approval and qualification process with them. Therefore, the cost of material and overhead related to products manufactured for qualification is included in selling expenses. In order to conserve capital resources in light of the year over year revenue decline, we have reduced our selling, general and administrative expenditures by eliminating headcount and other related expenses.

Provision for Income Taxes.

The federal statutory rate was 35% for fiscal year 2015 and 2014. Our effective tax rate differs from the statutory rate due to the company providing a full valuation allowance against net deferred tax assets, and accordingly did not recognize an income tax benefit related to losses incurred.

## Recent and Anticipated Future Trends

For the years ended January 2, 2016 and December 27, 2014, our NVvault™ non-volatile RDIMM used in cache protection and data logging applications, including our NVvault™ battery-free, the flash-based cache system, accounted for approximately 20% and 44% of total net product sales, respectively. We have experienced a steady decline in NVvault sales in recent years, due in large part to our loss of our most significant NVvault customer, Dell, beginning in 2012. There were no sales of NVvault™ products to Dell in the years ended January 2, 2016 and December 27, 2014, and we expect no future demand from Dell for our NVvault™ products. In order to leverage our NVvault™ technology and diversify our customer base, and to secure one or more new key customers, we continue to pursue additional qualifications of NVvault™ with other OEMs and to target new customer applications such as online transaction processing, virtualization, big data analytics, high speed transaction processing, high-performance database, and in-memory database applications. We also introduced EXPRESSvault™ in March 2011 and the next generation of EXPRESSvault™ (EV3) in July 2015 and we continue to pursue qualification of the next generation DDR3 NVvault™ and DDR4 NVvault™ with customers. Our future operating results will depend on our ability to commercialize these NVvault™ product extensions, as well as other products such as HyperVault™ and other high-density and high-performance solutions. If we are not successful in expanding our qualifications or marketing any new or enhanced products, we will be unable to secure revenues sufficient to replace lost NVvault revenue and our results of operations and prospects could be materially harmed.

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During our 2014 and 2015 fiscal years, we primarily marketed and sold our products to leading OEMs in the server, storage and communications markets. Consistent with the concentrated nature of the OEM customer base in our target markets, a small number of large customers have historically accounted for a significant portion of our net product sales. Two customers represented approximately 27% and 10% of our net product sales in 2015 and three customers represented approximately 20%, 14% and 19% of our net product sales in 2014. Because our target markets are characterized by a limited number of large companies, we anticipate that sales of our products will continue to be concentrated among a limited number of large customers in the foreseeable future. Additionally, the composition of major customers and their respective contributions to our net product sales have varied and will likely continue to vary from period to period as our OEMs progress through the life cycle of the products they produce and sell. We do not have long-term agreements with any of our customers and, as such, any or all of them could decide at any time to discontinue, decrease or delay their purchase of our products. In addition, the prices that these customers pay for our products could change at any time. The loss of any of our OEM customers, or a significant reduction in sales to any of them, could significantly reduce our net sales and adversely affect our operating results.

We have invested a significant portion of our research and development budget into the design of ASIC and field-programmable gate array (“FGPA”) devices, including the HyperCloud® and HyperVault memory subsystems, and the NVvault family of products. These products are subject to increased risks as compared to our legacy products, and we may be unable to achieve customer or market acceptance of these or any other existing or future products or achieve such acceptance in a timely manner. Further, we experienced a longer qualification cycle than anticipated with our HyperCloud® memory subsystems, as well as supply chain disruption and a shortage of DRAM and flash required to create the HyperCloud® memory subsystem and our NVvault products. These and other risks attendant to the production of our currently available and potential future products could reduce our achievable revenues from these products and prevent us from recouping our investments in the products.

We dedicate substantial resources to protecting our intellectual property, including our efforts to defend our patents against challenges made by way of reexamination proceedings at the USPTO and PTAB. These activities are likely to continue for the foreseeable future, without any guarantee that any ongoing or future patent protection and litigation activities will be successful. We are also subject to litigation based on claims that we have infringed on the intellectual property of others, against which we intend to defend ourselves vigorously. Litigation, whether or not eventually decided in our favor or settled, is costly and time-consuming and could divert management’s attention and resources. Because of the nature and inherent uncertainties of litigation, should the outcome of any of such actions be unfavorable, our business, financial condition, results of operations or cash flows could be materially and adversely affected.

Although we intend to pursue an intellectual property-based licensing business in order to monetize our intellectual property rights, we are currently operating based on a products-based business model and we may never be successful in developing any licensing business. Although we may pursue agreements with third parties to commercially license certain of our products or technologies, we may never successfully enter into any such agreement. Further, the terms of any such agreements that we may reach with third party licensees are uncertain and may not provide significant royalty or other licensing revenues to us to justify our costs of developing and maintaining the licensed intellectual property or may otherwise include terms that are not favorable to us. Additionally, the pursuit of a licensing business would require by its nature that we relinquish certain of our rights to our technologies and intellectual property that we license to third parties, which could limit our ability to base our own products on such technologies. If we are not

successful in achieving a licensing business, we may never recoup the costs associated with developing, maintaining, defending and enforcing our intellectual property portfolio and our financial condition would be harmed.

Our operations in the People's Republic of China ("PRC") are subject to various political, geographical and economic risks and uncertainties inherent to conducting business in the PRC. These include, among others, (i) potential changes in economic conditions in the region, (ii) managing a local workforce that may subject us to uncertainties or certain regulatory policies, (iii) changes in other policies of the Chinese governmental and regulatory agencies, and (iv) changes in the laws and policies of the U.S. government regarding the conduct of business in foreign countries, generally, or in the PRC, in particular. Additionally, the Chinese government controls the procedures by which its local currency, the Chinese Renminbi ("RMB"), is converted into other currencies and by which dividends may be declared or capital distributed for the purpose of repatriation of earnings and investments. If restrictions in the conversion of RMB or

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in the repatriation of earnings and investments through dividend and capital distribution restrictions are instituted, our operations and results may be negatively impacted. In addition, fluctuations in the exchange rate between RMB and U.S. dollars may adversely affect our expenses and results of operations, the value of our assets and liabilities and the comparability of our period-to-period results.

## Business Risks and Uncertainties

Our business and prospects are exposed to numerous risks and uncertainties. For more information, see the discussion under “Risk Factors” in Part I, Item 1A of this report.

## Critical Accounting Policies

The preparation of our consolidated financial statements in conformity with accounting principles generally accepted in the U.S. requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of net sales and expenses during the reporting period. By their nature, these estimates and assumptions are subject to an inherent degree of uncertainty. We base our estimates on our historical experience, knowledge of current conditions and our beliefs of what could occur in the future considering available information. We review our estimates on an on-going basis. Actual results may differ from these estimates, which may result in material adverse effects on our operating results and financial position. We believe the following critical accounting policies involve our more significant assumptions and estimates used in the preparation of our consolidated financial statements:

### Revenue Recognition.

### Product Sales

Our revenue from product sales primarily consists of product sales of high performance memory subsystems to OEMs, hyperscale data center operators and storage vendors.

We recognize revenues in accordance with FASB Accounting Standards Codification (“ASC”) Topic 605. Accordingly, we recognize revenues when there is persuasive evidence that an arrangement exists, product delivery and acceptance have occurred, the sales price is fixed or determinable, and collectability of the resulting receivable is reasonably assured.

We generally use customer purchase orders and/or contracts as evidence of an arrangement. Delivery occurs when goods are shipped for customers with shipping point terms and upon receipt for customers with destination terms, at which time title and risk of loss transfer to the customer. Shipping documents are used to verify delivery and customer acceptance. We assess whether the sales price is fixed or determinable based on the payment terms associated with the transaction and whether the sales price is subject to refund. Customers are generally allowed limited rights of return for up to 30 days, except for sales of excess component inventories, which contain no right-of-return privileges. Estimated returns are provided for at the time of sale based on historical experience or specific identification of an event necessitating a reserve. We offer a standard product warranty to our customers and have no other post-shipment obligations. We assess collectability based on the creditworthiness of the customer as determined by credit checks and evaluations, as well as the customer's payment history.

All amounts billed to customers related to shipping and handling are classified as net sales, while all costs incurred by us for shipping and handling are classified as cost of sales.

#### Engineering Services

We provide engineering services to our customers. We recognize revenue from these services when all of the following conditions are met: (1) evidence existed of an arrangement with the customer, typically consisting of a purchase order or contract; (2) our services were performed and risk of loss passed to the customer; (3) we completed all of the necessary terms of the contract; (4) the amount of revenue to which we were entitled was fixed or determinable;

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and (5) we believed it was probable that we would be able to collect the amount due from the customer. To the extent that one or more of these conditions has not been satisfied, we defer recognition of revenue.

Generally, we recognize revenue as the engineering services stipulated under the contract are completed and accepted by our customers. Engineering services are performed under a signed Statement of Work (“SOW”) with a customer. The deliverables and payment terms stipulated under the SOW provide guidance on the project revenue recognition.

Revenues from contracts with substantive defined milestones that we have determined are reasonable, relevant to all the deliverables and payment terms in the SOW that are commensurate with the efforts required to achieve the milestones are recognized under the milestone recognition method.

Estimated losses on all SOW projects are recognized in full as soon as they become evident

Fair Value of Financial Instruments.

Our financial instruments consist principally of cash and cash equivalents, restricted cash, accounts receivable, accounts payable, accrued expenses and debt instruments. The fair value of our cash equivalents is determined based on quoted prices in active markets for identical assets or Level 1 inputs. We recognize transfers between Levels 1 through 3 of the fair value hierarchy at the beginning of the reporting period. We believe that the carrying values of all other financial instruments approximate their current fair values due to their nature and respective durations.

Allowance for Doubtful Accounts.

We perform credit evaluations of our customers’ financial condition and limit the amount of credit extended to our customers as deemed necessary, but generally require no collateral. We evaluate the collectability of accounts receivable based on a combination of factors. In cases where we are aware of circumstances that may impair a specific customer’s ability to meet its financial obligations subsequent to the original sale, we will record an allowance against amounts due, and thereby reduce the net recognized receivable to the amount that we reasonably believe will be collected. For all other customers, we record allowances for doubtful accounts based primarily on the length of time the receivables are past due based on the terms of the originating transaction, the current business environment and our historical experience. Uncollectible accounts are charged against the allowance for doubtful accounts when all cost effective commercial means of collection have been exhausted. Generally, our credit losses have been within our expectations and the provisions established. However, we cannot guarantee that we will continue to experience credit loss rates similar to those we have experienced in the past.



Our accounts receivable are highly concentrated among a small number of customers, and a significant change in the liquidity or financial position of one of these customers could have a material adverse effect on the collectability of our accounts receivable, our liquidity and our future operating results.

#### Inventories.

We value our inventories at the lower of the actual cost to purchase or manufacture the inventory or the net realizable value of the inventory. Cost is determined on an average cost basis which approximates actual cost on a first-in, first-out basis and includes raw materials, labor and manufacturing overhead. At each balance sheet date, we evaluate ending inventory quantities on hand and record a provision for excess quantities and obsolescence. Among other factors, we consider historical demand and forecasted demand in relation to the inventory on hand, competitiveness of product offerings, market conditions and product life cycles when determining obsolescence and net realizable value. In addition, we consider changes in the market value of DRAM ICs and NAND flash in determining the net realizable value of our raw material inventory. Once established, any write downs are considered permanent adjustments to the cost basis of our excess or obsolete inventories.

A significant decrease in demand for our products could result in an increase in the amount of excess inventory quantities on hand. In addition, our estimates of future product demand may prove to be inaccurate, in which case we

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may have understated or overstated the provision required for excess and obsolete inventory. In the future, if our inventories are determined to be overvalued, we would be required to recognize additional expense in our cost of sales at the time of such determination. Likewise, if our inventories are determined to be undervalued, we may have over-reported our costs of sales in previous periods and would be required to recognize additional gross profit at the time such inventories are sold. In addition, should the market value of DRAM ICs or NAND flash decrease significantly, we may be required to lower our selling prices to reflect the lower current cost of our raw materials. If such price decreases reduce the net realizable value of our inventories to less than our cost, we would be required to recognize additional expense in our cost of sales in the same period. Although we make every reasonable effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand, technological developments or the market value of DRAM ICs or NAND flash could have a material effect on the value of our inventories and our reported operating results.

### Deferred Financing Costs, Debt Discount and Detachable Debt-Related Warrants.

Costs incurred to issue debt are deferred and recorded as a reduction to the debt balance in the accompanying consolidated balance sheets. We amortize debt issuance costs over the expected term of the related debt using the effective interest method. Debt discounts relate to the relative fair value of any warrants issued in conjunction with the debt are recorded as a reduction to the debt balance and accreted over the expected term of the debt to interest expense using the effective interest method.

### Impairment of Long-Lived Assets.

We evaluate the recoverability of the carrying value of long-lived assets held and used in our operations for impairment on at least an annual basis or whenever events or changes in circumstances indicate that their carrying value may not be recoverable. When such factors and circumstances exist, we compare the projected undiscounted future net cash flows associated with the related asset or group of assets over their estimated useful lives against their respective carrying amount. These projected future cash flows may vary significantly over time as a result of increased competition, changes in technology, fluctuations in demand, consolidation of our customers and reductions in average selling prices. If the carrying value is determined not to be recoverable from future operating cash flows, the asset is deemed impaired and an impairment loss is recognized to the extent the carrying value exceeds the estimated fair value of the asset. The fair value of the asset or asset group is based on market value when available, or when unavailable, on discounted expected cash flows.

### Warranty Liability.

We offer product warranties generally ranging from one to three years, depending on the product and negotiated terms of purchase agreements with our customers. Such warranties require us to repair or replace defective product returned

to us during the warranty period at no cost to the customer. Warranties are not offered on sales of excess inventory. Our estimates for warranty related costs are recorded at the time of sale based on historical and estimated future product return rates and expected repair or replacement costs. While such costs have historically been consistent between periods and within our expectations and the provisions established, unexpected changes in failure rates could have a material adverse impact on us, requiring additional warranty reserves, and adversely affecting our gross profit and gross margins.

#### Stock-Based Compensation.

We account for equity issuances to non-employees in accordance with ASC Topic 505. All transactions in which goods or services are the consideration received for the issuance of equity instruments are accounted for based on the fair value of the consideration received or the fair value of the equity instrument issued, whichever is more reliably measurable. The measurement date used to determine the fair value of the equity instrument issued is the earlier of the date on which the third-party performance is complete or the date on which it is probable that performance will occur.

In accordance with ASC Topic 718, employee and director stock-based compensation expense recognized during the period is based on the value of the portion of stock-based payment awards that is ultimately expected to vest

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during the period. Given that stock-based compensation expense recognized in the consolidated statements of operations is based on awards ultimately expected to vest, it has been reduced for estimated forfeitures. ASC Topic 718 requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. Our estimated average forfeiture rates are based on historical forfeiture experience and estimated future forfeitures.

The fair value of common stock option awards to employees and directors is calculated using the Black-Scholes option pricing model. The Black-Scholes model requires subjective assumptions regarding future stock price volatility and expected time to exercise, along with assumptions about the risk-free interest rate and expected dividends, all of which affect the estimated fair values of our common stock option awards. The expected term of options granted is calculated as the average of the weighted vesting period and the contractual expiration date of the option. This calculation is based on the safe harbor method permitted by the Securities and Exchange Commission (“SEC”) in instances where the vesting and exercise terms of options granted meet certain conditions and where limited historical exercise data is available. The expected volatility is based on the historical volatility of our common stock. The risk-free rate selected to value any particular grant is based on the U.S. Treasury rate that corresponds to the expected term of the grant effective as of the date of the grant. The expected dividends assumption is based on our history and our expectations regarding dividend payouts. We evaluate the assumptions used to value our common stock option awards on a quarterly basis. If factors change and we employ different assumptions, stock-based compensation expense may differ significantly from what we have recorded in prior periods. Compensation expense for common stock option awards with graded vesting schedules is recognized on a straight-line basis over the requisite service period for the last separately vesting portion of the award, provided that the accumulated cost recognized as of any date at least equals the value of the vested portion of the award.

We recognize the fair value of restricted stock awards issued to employees and outside directors as stock-based compensation expense on a straight-line basis over the vesting period for the last separately vesting portion of the awards. Fair value is determined as the difference between the closing price of our common stock on the grant date and the purchase price of the restricted stock award, if any, reduced by expected forfeitures.

If there are any modifications or cancellations of the underlying vested or unvested stock-based awards, we may be required to accelerate, increase or cancel any remaining unearned stock-based compensation expense, or record additional expense for vested stock-based awards. Future stock-based compensation expense and unearned stock-based compensation may increase to the extent that we grant additional common stock options or other stock-based awards.

Income Taxes.

Deferred tax assets and liabilities are recognized to reflect the estimated future tax effects of future deductible or taxable amounts attributable to events that have been recognized on a cumulative basis in the consolidated financial statements, calculated at enacted tax rates for expected periods of realization. We regularly review our deferred tax

assets for recoverability and establish a valuation allowance, when determined necessary, based on historical taxable income, projected future taxable income, and the expected timing of the reversals of existing temporary differences. Because we have operated at a loss for an extended period of time, we did not recognize deferred tax assets related to losses incurred in 2015 or 2014. In the future, if we realize a deferred tax asset that currently carries a valuation allowance, we may record an income tax benefit or a reduction to income tax expense in the period of such realization.

ASC Topic 740 prescribes a recognition threshold and measurement requirement for the financial statement recognition of a tax position that has been taken or is expected to be taken on a tax return and also provides guidance on de-recognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. Under ASC Topic 740 we may only recognize or continue to recognize tax positions that meet a “more likely than not” threshold.

The application of tax laws and regulations is subject to legal and factual interpretation, judgment and uncertainty. Tax laws and regulations themselves are subject to change as a result of changes in fiscal policy, changes in legislation, the evolution of regulations and court rulings. Therefore, the actual liability for U.S. or foreign taxes may be materially different from our estimates, which could result in the need to record additional tax liabilities or potentially reverse previously recorded tax liabilities.

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## Interest expense.

Interest expense consists primarily of interest associated with our debt issued to SVIC and Fortress, including fees related to the term loans, accretion of debt discount and amortization of debt issuance costs. We recognize the accretion of debt discounts and the amortization of interest costs using the effective interest method.

## Results of Operations

## Year Ended January 2, 2016 Compared to the Year Ended December 27, 2014

The following table sets forth our consolidated statements of operations as a percentage of total net revenues for the years indicated:

	Year Ended			
	January 2, 2016		December 27, 2014	
Net product sales	86	%	100	%
NRE revenues	14		-	
Total net revenues	100		100	
Cost of sales	74		79	
Gross profit	26		21	
Operating expenses:				
Research and development	75		24	
Intellectual property legal fees	70		33	
Selling, general and administrative	98		35	
Total operating expenses	243		93	
Operating loss	(217)		(72)	
Other expense, net:				
Interest expense, net	(26)		(8)	
Other expense, net	(13)		-	
Total other expense, net	(39)		(8)	
Loss before provision for income tax	(256)		(80)	
Provision for income taxes	-		-	

Net loss	(256)	%	(80)	%
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## Net Product Sales, NRE Revenues, Cost of Sales and Gross Profit

The following table presents net product sales, NRE revenues, cost of sales and gross profit for the years ended January 2, 2016 and December 27, 2014 (in thousands, except percentages):

	Year Ended				
	January 2, 2016	December 27, 2014	Change	% Change	
			\$		
Net product sales	\$ 6,869	\$ 19,195	(12,326)	(64)	%
NRE revenues	1,143	-	1,143	100	%
Total net revenues	8,012	19,195	(11,183)	(58)	%
Cost of sales	5,915	15,231	(9,316)	(61)	%
			\$		
Gross profit	\$ 2,097	\$ 3,964	(1,867)	(47)	%
Gross margin	26.2%	20.7%	5.5	%	

**Net Product Sales.** The decrease in net product sales for 2015 as compared with 2014 resulted primarily from decreases of approximately (i) \$7.1 million in sales of our first generation NVvault (ii) \$1.7 million of sales of HyperCloud® (iii) \$1.9 million of VLP sales (iv) \$1.0 million in sales of Planar X and (v) \$0.6 million of flash sales.

**NRE Revenues.** The increase in NRE revenues for 2015 as compared with 2014 resulted from revenue recognized from our JDLA with Samsung entered into in November 2015.

**Gross Profit, Gross Margin and Cost of Sales.** The increase in gross margin for 2015 as compared to 2014 is the result of our NRE revenues from the JDLA offset by a decrease in our gross profit from our product sales as a result of a change in our product mix and reduced sales of our higher margin first generation NVvault™ sales in 2015. In addition, the allocation of overhead over a lower revenue base has also impacted our gross margin.

**Research and Development.**



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The following table presents research and development expenses for the years ended January 2, 2016 and December 27, 2014 (in thousands, except percentages):

	Year Ended				
	January 2,	December 27,		%	
	2016	2014	Change	Change	
Research and development	\$ 6,049	\$ 4,586	\$ 1,463	32	%

The increase in research and development expense for 2015 as compared to 2014 resulted primarily from an increase of (i) \$1.2 million in headcount costs and related overhead and travel expenses (ii) \$0.07 million in product research expense and (iii) \$0.2 million in professional and outside services.

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## Intellectual Property Legal Fees.

The following table presents intellectual property legal fees for the years ended January 2, 2016 and December 27, 2014 (in thousands, except percentages):

	Year Ended		Change	% Change	
	January 2, 2016	December 27, 2014			
Intellectual property legal fees	\$ 5,588	\$ 6,387	\$ (799)	(13)	%

The decrease in intellectual property legal fees for 2015 as compared to 2014 resulted from a decrease in legal fees incurred for trade secret litigation and patent litigation primarily as the result of agreements where warrants were issued for professional services rendered in 2015 reducing legal expenses.

## Selling, General and Administrative.

The following table presents selling, general and administrative expenses for the years ended January 2, 2016 and December 27, 2014 (in thousands, except percentages):

	Year Ended		Change	% Change	
	January 2, 2016	December 27, 2014			
Selling, general and administrative	\$ 7,841	\$ 6,796	\$ 1,045	15	%

Selling, general and administrative expenses increased by approximately \$1.0 million in 2015 as compared to 2014. These increases were primarily due to an increase of (i) \$0.9 million in headcount costs and related overhead and travel expenses and (ii) an increase of \$0.4 million in outside services offset by decreases of (i) \$0.1 million in

advertising and product evaluation expenses and (ii) \$0.2 million related to commission payments to sales representatives.

Other Expense, Net.

The following table presents other expense, net for the years ended January 2, 2016 and December 27, 2014 (in thousands, except percentages):

	Year Ended				
	January 2, 2016	December 27, 2014	Change	% Change	
Interest expense, net	\$ (2,064)	\$ (1,574)	\$ (490)	(31)	%
Other expense, net	(1,081)	-	(1,081)	(100)	%
Total other expense, net	\$ (3,145)	\$ (1,574)	\$ (1,571)	(100)	%

The increase in interest expense for 2015 as compared to 2014 is primarily due to interest expense from increased outstanding principal balances and the accelerated amortization of debt discount and debt issuance costs associated with repayment of our term debt with Fortress.

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The increases in other expense, net for 2015 as compared to 2014 is primarily due to funds in the amount of \$1.5 million received from our insurance company as compensation for damages to our facility in the PRC, offset by (i) payment of \$0.9 million associated with litigation (ii) \$1.0 million lump sum payment to terminate the Letter Agreement with Fortress and (iii) \$0.8 million in warrant expense associated with amending pricing on the existing warrants and issuance of new warrants associated with the termination of our agreement with Fortress.

Income Tax Provision.

The following table presents the provision for income taxes for the years ended January 2, 2016 and December 27, 2014 (in thousands, except percentages):