

NETLIST INC
Form 10-K
March 30, 2018
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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 December 30, 2017

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 Stock Market

(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	Smaller reporting company
		(Do not check if a smaller reporting company)	Emerging growth company

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

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

The aggregate market value of the registrant's voting and non-voting common equity held by non-affiliates, computed by reference to the price at which the registrant's common stock was last sold on July 1, 2017, the last business day of the registrant's most recently completed second fiscal quarter, as reported by the Nasdaq Capital Market, was approximately \$58.0 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, and shall not be considered, a determination as to whether such persons are affiliates of the registrant for any other purpose.

As of March 26, 2018, there were 85,415,180 outstanding shares of the registrant's common stock.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive proxy statement for the registrant's 2018 annual meeting of stockholders (or, if such proxy statement is filed more than 120 days after the end of the fiscal year ended December 30, 2017, an amendment to this report) are incorporated by reference in Part III of this report to the extent stated therein.

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Cautionary Note Regarding Forward-Looking Statements

This report includes “forward looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements other than historical facts and often address future events or our future performance. Words such as "anticipate," "estimate," "expect," "project," "intend," "may," “will,” “might,” "plan," "predict," "believe," "should," “could” and similar words or expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

Forward-looking statements contained in this report include statements about, among other things:

- our beliefs regarding the market and demand for our products or the component products we resell;
- our ability to develop and launch new products that are attractive to the market and stimulate customer demand for these products;
- our plans relating to our intellectual property, including our goals of monetizing, licensing, expanding and defending our patent portfolio;
- our expectations and strategies regarding outstanding legal proceedings and patent reexaminations relating to our intellectual property portfolio, including our pending proceedings against SK hynix Inc., a South Korean memory semiconductor supplier (“SK hynix”);
- our expectations with respect to any strategic partnerships or other similar relationships we may pursue;
- the competitive landscape of our industry;
- general market, economic and political conditions;
- our business strategies and objectives;
- our expectations regarding our future operations and financial position, including revenues, costs and prospects, and our liquidity and capital resources, including cash flows, sufficiency of cash resources, efforts to reduce expenses and the potential for future financings; and
- the impact of the above factors and other future events on the market price and trading volume of our common stock.

All forward-looking statements reflect management’s present assumptions, expectations and beliefs regarding future events and are subject to known and unknown risks, uncertainties and other factors that could cause actual results to differ materially from those expressed in or implied by any forward-looking statements. These risks, uncertainties and other factors include those described in Item 1A. Risk Factors of this report. In addition, we operate in a competitive

and rapidly evolving industry in which new risks emerge from time to time, and it is not possible for us to predict all of the risks we may face, nor can we assess the impact of all factors on our business or the extent to which any factor or combination of factors could cause actual results to differ from our expectations. In light of these risks, uncertainties and other factors, our forward-looking statements should not be relied on as predictions of future events. All forward-looking statements reflect our assumptions, expectations and beliefs only as of the date they are made, and except as required by law, we undertake no obligation to revise or update any forward-looking statements for any reason.

We qualify all of our forward-looking statements by this cautionary note.

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Unless the context indicates otherwise, all references to "Netlist," our "Company," "we," "us," or "our" in this report refer to Netlist, Inc., together with its consolidated subsidiaries, and all cross-references to notes in this report refer to the identified note contained in our consolidated financial statements included in Part II, Item 8 of this report. We own registered or unregistered trademark rights to NVvault®, HyperCloud®, HybriDIMM™, EXPRESSvault™, PreSight™, “memory at storage capacities, storage at memory speeds”™, Netlist® and our company logo. Although we do not use the “®” or “™” symbol in each instance in which one of our registered or common law trademarks appears in this report, this should not be construed as any indication that we will not assert our rights thereto to the fullest extent under applicable law. Any other service marks, trademarks or trade names appearing in this report are the property of their respective owners.

PART I

Item 1. Business

Overview

We provide high-performance modular memory subsystems to customers in diverse industries that require enterprise and storage class memory solutions to empower critical business decisions. We have a history of introducing disruptive new products, such as one of the first load reduced dual in-line memory modules ("LRDIMM") based on our distributed buffer architecture, which has been adopted by the industry for DDR4 LRDIMM. We were also one of the first to bring NAND flash memory ("NAND flash") to the memory channel with our NVvault non-volatile dual in-line memory modules ("NVDIMM") using software-intensive controllers and merging dynamic random access memory integrated circuits ("DRAM ICs" or "DRAM") and NAND flash to solve data bottleneck and data retention challenges encountered in high-performance computing environments. We recently introduced a new generation of storage class memory products called HybriDIMM to address the growing need for real-time analytics in Big Data applications, in-memory databases, high performance computing and advanced data storage solutions. We also resell NAND flash, DRAM products and other component products to end-customers that are not reached in the distribution models of the component manufacturers, including storage customers, appliance customers, system builders and cloud and datacenter customers.

Due to the ground-breaking product development of our engineering teams, we have built a robust portfolio of over 100 issued and pending U.S. and foreign patents, many seminal, in the areas of hybrid memory, storage class memory, rank multiplication and load reduction. Since our inception, we have dedicated substantial resources to the development, protection and enforcement of technology innovations we believe are essential to our business. Our early pioneering work in these areas has been broadly adopted in industry-standard registered dual in-line memory modules ("RDIMM"), LRDIMM and NVDIMM. Our objective is to continue to innovate in our field and invest further in our intellectual property portfolio, with the goal of monetizing our intellectual property through a combination of

product sales and licensing, royalty or other revenue-producing arrangements, which may result from joint development or similar partnerships or defense of our patents through enforcement actions against parties we believe are infringing them.

Our Industry

The global high-performance memory module market is driven by increasing demand from data center and enterprise storage applications for improved input/output performance, lower latency and data retention capabilities in the event of unexpected system failure. Global data center IP traffic is expected to reach 163 zettabytes of data in 2025, up from 16.1 zettabytes in 2016, according to International Data Corporation. The proliferation of mobile devices, social media platforms, cognitive/artificial intelligence systems and cloud-based software applications is resulting in the creation of unprecedented amounts of unstructured data. In order to manage and analyze this data, we believe new computing and memory architectures need to be developed to satisfy the needs in the industry.

In high-performance computing environments, such as cloud-based computing and Big Data applications, a system's overall processing speed is limited to the ability of the central processing unit ("CPU") to access data cached in memory. Memory speeds have failed to keep pace with improvements in CPU processing speeds, resulting in buffering

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delays encountered in highly intensive computing environments. To mitigate challenges arising from differences in CPU and memory clock speeds, data center operators have increased the number of servers in their facilities as well as the memory content in each server. Memory capacity is expanded through the use of DIMMs, generally incorporating up to 16 GB of DRAM per module with today's technology and moving up to 64/128 GB of DRAM per module and beyond. Our technology enables an intelligent controller to be integrated onto the DIMM, in order to manage the rapid flow of data between the CPU and memory. The number of DIMMs incorporated into a server increases in correlation with the number of processing cores in the CPU. DDR4 DIMMs incorporate our load-reduction technology to mitigate the trade-off between operating speed and memory capacity inherent in prior generations of server DIMM. These load-reduced DIMMs, or LRDIMMs, are now the pre-dominant memory technology used in high-capacity servers and high-performance computing clusters.

Technical challenges arising from the production of DRAM using leading edge semiconductor manufacturing processes is limiting the material's long-term viability as the high-speed memory of choice in demanding computing environments. Conversely, NAND flash, while characterized by lower access speeds, is scaling down in cost and scaling up in density at a significantly better rate than DRAM. This has led the industry to explore alternative computer architectures and new memory materials capable of bridging DRAM's superior access speed with NAND flash's lower cost and higher densities. We expect memory subsystems relying on intelligent controller technology to leverage NAND flash will most effectively address the industry's growing need for high-speed data management and analytics.

Technology

Our portfolio of proprietary technologies and design techniques includes:

HybriDIMM Technology

HybriDIMM technology is, we believe, a breakthrough that allows for data that lives on a slower media, such as NAND flash, to coexist on the memory channel without breaking the deterministic nature of the memory channel. A proprietary software protocol controls the movement of data between DRAM and NAND flash on the DIMM while maintaining the integrity of the memory channel. HybriDIMM technology is material and protocol agnostic, allowing for leverage of future storage and memory technologies on the DIMM.

In developing this technology, we partnered with Samsung Electronics Co., Ltd. ("Samsung") in November 2015 through a joint development and license agreement ("JDLA") to jointly develop new storage class memory technologies, including a standardized product interface for NVDIMM-P memory modules, in order to facilitate broad industry adoption of this new technology. We believe Samsung represents an important strategic partner with a high level of technical capability in memory that can facilitate bringing our HybriDIMM technology to market.

Distributed Buffer Architecture

We invented the distributed buffer architecture that enables the buffering of data signals along the bottom edge of the memory module using multiple data buffer devices distributed between the edge connector and the DRAM. The result is shorter data paths, improved signal integrity, and reduced latency compared to the industry-standard design for DDR3 LRDIMM. The memory industry has widely adopted our distributed architecture for DDR4 LRDIMM. Our HyperCloud product was our first LRDIMM product built on this distributed buffer architecture.

Design Expertise

We have designed special algorithms that can be implemented in stand-alone integrated circuits or integrated into other functional blocks in application-specific integrated circuits (“ASICs”). We utilize these algorithms in our HybriDIMM product to incorporate rank multiplication and load reduction functionality. We also incorporate these algorithms in our NVvault product line, which is also known in the industry as NVDIMM-N.

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Proprietary PCB Designs

We utilize advanced techniques to optimize electronic signal strength and integrity within a printed circuit board (“PCB”). These techniques include the use of 10-layer or 12-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 original equipment manufacturers (“OEMs”) to develop products with smaller footprints for their customers.

Very Low Profile Designs

We believe we were the first company to create memory subsystems in a form factor of less than one inch in height. Our innovative very low profile (“VLP”) DIMMs provide developers of server blades, storage bridge bay applications, telecommunications servers, switches and routers with a wide range of high performance memory options 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. Our latest VLP memory product includes a patented PlanarX memory module technology providing 32 GB 4Rx4 memory solutions for dense space requirements.

Thermal Management Designs

We design our memory subsystems to ensure effective heat dissipation. We use thermal simulation and data 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.

Products

Our commercially available memory subsystem products and other products that we sell include:

Component and Other Product Resales

In addition to our own products, we resell certain component products that we purchase for the purpose of resale. We have purchased certain of these products, including NAND flash and DRAM products, from Samsung under the terms of the JDLA. We have also sourced these products from other suppliers to the extent sufficient product is not available from Samsung to meet customer demand or in the event of other Samsung supply issues. In 2017 and 2016, resales of these products represented approximately 85% and 66% of our net product revenues, respectively. Additionally, we sell excess component inventory to distributors and other users of memory integrated circuits.

Storage Class Memory

Using an industry standard DDR4 LRDIMM interface, we believe HybriDIMM is the industry's first storage class memory product capable of operating in existing Intel/AMD x86 servers without BIOS and hardware changes. HybriDIMM unifies DRAM and NAND flash in a plug-and-play module, delivering terabyte storage capacities operating at DRAM-like nanosecond memory speeds. HybriDIMM's architecture combines an on-DIMM co-processor with our software-defined data management algorithm. HybriDIMM's feature-set encompasses the NVDIMM functionalities adopted by the industry. HybriDIMM dramatically improves application performance by reducing data access latency by up to 1,000 times versus the fastest existing storage solution known to us, and provides up to an 80% cost reduction compared to the highest existing memory density for in-memory applications known to us.

We publicly demonstrated a HybriDIMM prototype in August 2016 and we sampled HybriDIMM to select customers in the second half of 2017, and we are now working with certain customers to transition to volume production.

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Nonvolatile Memory

Our Vault product line enables customers to accelerate data running through their servers and storage and reliably protect enterprise-level cache, metadata and log data by providing near instantaneous recovery in the event of a system failure or power outage. Our nonvolatile memory offering includes:

EXPRESSvault PCIe (EV3). EV3 is a plug-and-play memory card for server appliances which provides data acceleration and data protection. It is compatible with industry standard PCIe 3.0 x8 lane slots, eliminating the need for proprietary hardware and extra motherboard space. EXPRESSvault ships with Linux and Windows drivers compatible with standard PCIe peripheral command sets.

NVvault DDR3 NVDIMM (NV3). NV3 provides data acceleration and data protection in a Joint Electron Device Engineering Council (“JEDEC”) standard DD3 interface for integration into industry-standard server and storage solutions. NV3 incorporates our patented Vault cache-to-flash controller in conjunction with general purpose CPUs, redundant array of independent disks (“RAID”) adapters and other devices.

NVvault DDR4 NVDIMM (NV4). NV4 relies on the NVDIMM-N interface specification to provide data acceleration and data protection in a JEDEC standard DDR4 interface. We have demonstrated NV4 to deliver a 200% performance improvement in transaction-based workloads compared to PCIe NAND devices.

Specialty DIMMs and Embedded Flash

A small portion of our net product revenues is 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 OEM system launch, we engage with our OEM customers from the earliest stages of new product development definition, providing us valuable 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.

Intellectual Property

We believe 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 technologies and other proprietary information. As of December 30, 2017, we had 74 U.S. and foreign issued patents, two German utility models and 37 pending U.S. and foreign patent applications. Assuming they are properly maintained and are not invalidated by reexamination proceedings, our patents will expire at various dates between 2022 and 2035. Our issued patents cover various aspects of our innovations and include various claim scopes and, as a result, we believe our business is not materially dependent on any one claim in any of our existing patents or pending patent applications.

We have devoted significant resources to develop and enforce our intellectual property portfolio. For instance, we have taken action to protect and defend our innovations by filing legal proceedings for patent infringement against SK hynix and two of its subsidiaries in the U.S. International Trade Commission ("ITC"), U.S. district court and the courts of Germany and the People's Republic of China ("PRC"). In our two separate ITC actions, we have requested exclusion orders that direct U.S. Customs and Border Protection to stop allegedly infringing SK hynix RDIMM and LRDIMM products from entering the United States. Although our first ITC action has been resolved with a final determination of no infringement of the patents asserted in this action, our second ITC action, which relates to different patents, remains ongoing. In our U.S. district court and international court proceedings, we are primarily seeking damages. All of our patents involved in these proceedings cover key features of RDIMM and LRDIMM products.

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Customers

We resell certain component products that we purchase for the purpose of resale to certain end-customers that are not reached in the distribution models of the component manufacturers, including storage customers, appliance customers, system builders and cloud and datacenter customers. We also market and sell our memory subsystem products, primarily to OEMs in the server, high-performance computing and communications markets.

Our target markets are characterized by a limited number of large companies, and consolidation in one or more of our target markets may further increase this concentration. As a result, sales to small numbers of customers have historically represented a substantial portion of our net product revenues. Additionally, the composition of major customers and their respective contributions to our net product revenues have fluctuated and will likely continue to fluctuate from period to period as our existing and prospective customers progress through the life cycle of the products they produce and sell and experience resulting fluctuations in their product demand. See Note 10 to our consolidated financial statements included elsewhere in this annual report for more information about our customer concentrations.

We do not have long-term agreements with any of our customers. Instead, our product sales are made primarily pursuant to stand-alone purchase orders that we often receive no more than two weeks in advance of the desired delivery date and that may be rescheduled or cancelled on relatively short notice, which reduces our backlog of firm orders. 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.

Additionally, we offer warranties on our memory subsystems generally ranging from one to three years, depending on the product and negotiated terms of purchase orders from our customers. These warranties require us to repair or replace defective products returned to us during such warranty period at no cost to the customer.

Sales and Marketing

We primarily market and sell our products and the component products we resell 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 existing and prospective customers in our target markets.

We utilize well-trained, highly technical program management teams to 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 customer's issues that may arise during the sales process. Additionally, they help us 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 and Supply

Manufacturing

We manufacture substantially all of our memory subsystem products at our facility in the PRC, which is certified in International Organization for Standardization ("ISO") 9001:2008 Quality Management Systems and ISO 14001:2004 Environmental Management Standards. Our in-house manufacturing function, combined with our engineering and design capabilities, allows us to assemble our memory subsystems quickly and in high volume. Our manufacturing facility is capable of surface mount assembly, subsystem testing, system level burn-in testing, programming, marking, labeling and packaging. Manufacturing cycle times for our memory subsystem products, from receipt of order, are typically one week or less and in some cases as short as two days.

We schedule production based on purchase order commitments and anticipated orders. We release raw materials to the manufacturing floor by means of an online shop floor control system, which allows for internal quality

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analysis, direct access to inventory information and production floor material tracking. We have a flexible manufacturing workforce, which allows us to manage unforecasted demand.

We perform ongoing reliability testing on our memory subsystems and share the results of that testing with our customers. In addition, we have implemented procedures that require all of our memory subsystems to undergo functional and system burn-in testing prior to delivery to a customer. We also supplement our test capabilities with advanced imaging technology to inspect the quality of our assemblies.

Supply

We acquire components and materials, such as field-programmable gate arrays (“FPGAs”), ASICs, DRAM ICs and NAND flash, directly from integrated circuit manufacturers and assemble them into our finished subsystem products. We also purchase some of these component products from Samsung under the terms of the JDLA, and from alternative suppliers, for the purpose of resale to customers directly.

We have developed supplier relationships with several manufacturers of these component products, and we typically qualify our memory subsystem products with our customers using multiple component manufacturers. However, our actual purchases of component products, both for integration into our products and for resale, are concentrated in a small number of suppliers, including an affiliate of Samsung, from which we obtained 60% and 73% of our total inventory purchases in 2017 and 2016, respectively, and Memorysolution GmbH from which we obtained 10% of our total inventory purchases in 2017. See Note 10 to our consolidated financial statements included elsewhere in this annual report for more information about our supplier concentrations.

We order component products based primarily on forecasts of customer demand, which subjects us to certain inventory risks in the event our forecasts are not accurate. In order to mitigate these inventory risks, we seek to resell to distributors and other users of memory integrated circuits excess quantities of the component inventories we have purchased for integration in our memory subsystem products.

Our quality assurance engineers work with our suppliers to ensure that the raw materials we receive meet our quality standards. These engineers also perform on-site 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 manufacturing and sale processes.

Competition

Our products are primarily targeted to OEMs in the server, high-performance computing and communications markets. In addition, we resell certain component products to storage customers, appliance customers, system builders and cloud and datacenter customers. These markets are intensely competitive, as numerous companies vie for business opportunities at a limited number of large OEMs and other customers. We face competition from DRAM suppliers, memory module providers and logic suppliers for many of our products, including EXPRESSvault, NVvault and HybriDIMM. We also face competition from the manufacturers and distributors of the component products we resell to customers, as these manufacturers and distributors could decide at any time to sell these component products to these customers directly. 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 the components we resell to them, or could develop internal solutions or enter into strategic relationships with, or acquire, other high-density memory module or component providers. Any of these actions could reduce our customers' demand for our products or the component products we resell. Additionally, some of our significant suppliers could choose to sell component products to customers directly, which would adversely affect our ability to resell these products, or may be choose to manufacture competitive memory subsystem products themselves or reduce our supply of

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essential components of our products, which could adversely affect our ability to manufacture and sell our memory subsystems.

We believe the principal competitive factors in the selection of memory subsystems or the component products we resell by existing and potential future customers are:

- price;
- timeliness of new value-add product introductions;
- development of advanced technologies;
- fulfillment capability and flexibility;
- understanding of system and business requirements;
- design characteristics and performance;
- quality and reliability;
- track record of volume delivery; and
- credibility with the customer

We believe we compete favorably with respect to these factors. However, our target markets could disagree, or circumstances could change with respect to one or more of these competitive factors. Further, we believe our ability to compete in our current target markets and potential future markets will depend in part on our ability to successfully and timely develop, introduce and sell at attractive prices new and enhanced products or technologies and otherwise respond to changing market requirements, which we may not be able to do faster and better than our competitors. Moreover, many of our competitors have substantially greater financial, technical, marketing, distribution and other resources, broader product lines, lower cost structures, greater brand recognition, more influence on industry standards, more extensive or established patent portfolios and longer standing relationships with customers and suppliers. We may not be able to compete effectively against any of these organizations. If we are unable to compete effectively, then our market position and prospects could deteriorate and our revenues could decline.

Research and Development

Our industry is characterized by rapid technological change, evolving industry standards and rapid product obsolescence. As a result, continuous development of new technology, processes and product innovation is necessary in order to be successful. We believe the continued and timely development of new products and improvement of existing products are critical to our business and prospects for growth.

To this end, we have assembled a team of engineers with expertise in computer architectures, system memory, subsystem design and memory software, as well as PCB design, VLP design and thermal management. Our engineers also focus on developing and incorporating new techniques, methodologies and processes for testing and manufacturing our products, and also collaborate with our customers to provide us with insights into and expertise in systems architecture, power budget, performance requirements, operating environment (such as air flow and operating temperature) and any mechanical constraints.

We have invested significant resources in our product research and development efforts. 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 \$5.2 million and \$6.3 million in 2017 and 2016, respectively.

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Employees

As of December 30, 2017, we had approximately 82 employees (including 68 full-time employees and 14 temporary employees). In addition to our employees, a significant portion of our workforce consists of contract personnel. 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 and Other Laws

We are subject to various and frequently changing U.S. federal, state and local and foreign laws and regulations relating to the protection of the environment, including laws governing the discharge of pollutants into the air and water, the management and disposal of hazardous substances and wastes and the clean-up of contaminated sites. 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 these and other 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.

We also may be subject to a variety of laws and regulations relating to other matters, including workplace health and safety, labor and employment, foreign business practices (including the U.S. Foreign Corrupt Practices Act and applicable foreign anti-bribery laws), data protection, public reporting and taxation, among others. It is difficult and costly to manage the requirements of every authority having jurisdiction over our various activities and to comply with their varying standards. Any changes to existing regulations or adoption of new regulations may result in significant additional expense to us or our customers. Further, our failure to comply with any applicable laws and regulations may result in a variety of administrative, civil and criminal enforcement measures, including monetary penalties or imposition of sanctions or other corrective requirements.

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 (this reference to our website is an

inactive textual reference only and the contents of our website are not incorporated in 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 these 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 guidelines, 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

Investing in our securities involves a high degree of risk. Before making any investment decision with respect to our securities, you should carefully consider each of the following risk factors and the other information in this report. Each of these risk factors, either alone or together, could adversely affect our business, operating results, financial condition, ability to access capital resources and future growth prospects, as well as the value of an investment in our securities. As a result, you could lose some or all of any investment you have made or may make in our securities. In

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assessing these risks, you should also review the other information contained in this report, including our consolidated financial statements and the related notes, and the other filings we make with the SEC. The risks described below are not the only ones we face. Additional risks of which we are not presently aware or that we currently believe are immaterial may also impair our business operations and financial position.

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, 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, 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, increased demand for our memory subsystems and other product offerings and our ability to monetize our intellectual property. We may not be successful in any of these pursuits, and we may never achieve profitability or sustain profitability if achieved.

Our results of operations fluctuate significantly and are difficult to predict.

Our operating results have fluctuated significantly in the past, and we expect they will continue to fluctuate from period to period due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include, among others, the amount and timing of sales of products, the prices we charge for products, changes in product mix, customer mix or other similar factors, the rate and timing of our billing and collections cycles and the timing and amount of our commitments and other payments, as well as the other risk factors described in this report. In addition, our results may be impacted by events that do not recur regularly, in the same amounts or at all in other periods, including events that may result in our incurrence of cash or non-cash charges or gains in certain periods.

These fluctuations in our operating results may render period-to-period comparisons less meaningful, and investors should not rely on the results of any one period as an indicator of future performance. Moreover, these fluctuations in our operating results could cause our performance in any particular period to fall below the expectations of investors or securities analysts or any guidance we have provided to the public, which could negatively affect the trading price of our common stock.

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, which may not be available when needed, on acceptable terms or at all.

To support our activities in the near term, we expect to rely on cash provided by our operations and proceeds from recent issuances of debt and equity securities, such as our issuance of convertible debt to an affiliate of Samsung Venture Investment Co. (“SVIC”) in November 2015 in connection with the JDLA; our September 2016 and August 2017 public offerings of common stock; our ongoing “at-the-market” common stock offering program established in November 2017; our funding arrangement with TR Global Funding V, LLC, an affiliate of TRGP Capital Management, LLC (“TRGP”), for costs associated with certain of our legal proceedings; and borrowing availability under our credit facility with Silicon Valley Bank (“SVB”). Taking into account our planned activities and sources of capital, we believe we have sufficient cash resources to satisfy our capital needs for at least the next 12 months. However, our estimates of our operating revenues and expenses and working capital requirements could be incorrect, and we may use our cash resources faster than we anticipate. Further, some or all of our ongoing or planned investments may not be successful and could further deplete our capital without immediate, or any, cash returns.

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

- the acceptance of, and demand for, our products and the component products we resell to customers;
- our success, and that of our strategic partners, in developing and selling products derived from our technology;
- the extent and timing of any investments in developing, marketing and launching new or enhanced products or technologies;
- the costs of developing, improving and maintaining our internal design, testing and manufacturing processes;
- the costs associated with maintaining, defending and enforcing our intellectual property rights;
- our results of operations, including our levels of net product revenues and any other revenues we may receive, including non-recurring engineering (“NRE”), license, royalty or other fees;
- the amount and timing of vendor payments and the collection of receivables, among other factors affecting our working capital;
- our receipt of cash proceeds from the exercise of outstanding stock options or warrants to acquire our common stock;
- the nature and timing of acquisitions or other strategic transactions or relationships in which we engage, if any; and
- the costs associated with the continued operation, and any future growth, of our business.

Until we can generate sufficient revenues to finance our cash requirements from our operations, 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 or pursuing alternative sources of capital, such as through asset or technology sales or licenses or other alternative financing arrangements. Further, even if our near-term liquidity expectations prove correct, we may still seek to raise capital through one or more of these financing alternatives. However, we may not be able to obtain capital when needed or desired, on terms acceptable to us or at all.

Inadequate working capital 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. A lack of sufficient funding may also require us to significantly modify our business model and/or reduce or cease our operations, which could include implementing cost-cutting measures or delaying, scaling back or eliminating some or all of our ongoing and planned investments in corporate infrastructure, research and development projects, business development initiatives and sales and marketing activities, among other

activities. 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. Additionally, if we are not able to maintain the listing of our common stock on the Nasdaq Capital Market, the challenges and risks of equity financings may significantly increase, including potentially increasing the dilution of any such financing or decreasing our ability to effect such a financing at all. If we incur additional debt, it may increase our leverage relative to our earnings or to our equity capitalization or have other material consequences. If we pursue asset or technology sales or licenses or other alternative financing arrangements to obtain additional capital, our operational capacity may be limited and any revenue

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streams or business plans that are dependent on the sold or licensed assets may be reduced or eliminated. Moreover, we may incur substantial costs in pursuing any future capital-raising transactions, including investment banking, legal and accounting fees, printing and distribution expenses and other similar costs, which would reduce the benefit of the capital received from the transaction.

We may be unsuccessful in monetizing our intellectual property portfolio.

We dedicate substantial resources to developing technology innovations we believe are essential to our business. We intend to pursue monetization avenues for our intellectual property portfolio, potentially including licensing, royalty or other revenue-producing arrangements. However, we have not generated any such revenue stream from our intellectual property to date, and we may never be successful in achieving this objective.

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 we may reach with third-party licensees are uncertain and may not provide sufficient 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 licensing arrangements 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 or could reduce the economic value we receive from such technologies and intellectual property. Additionally, the establishment of arrangements to monetize our intellectual property may be more difficult or costly than expected, may require additional personnel and investments and may be a significant distraction for management.

Our ability to establish licensing, royalty or similar revenues, and maintain or increase any such revenues we are able to establish, depends on a variety of factors, including, among others, the novelty, utility, performance, quality, breadth, depth and overall perceived value of our intellectual property portfolio, all as compared to that of our competitors, as well as our sales and marketing capabilities. Even if we are able to secure these revenues, they may be negatively affected by factors that are entirely or partially outside our control, including reductions in our customers' sales prices, sales volumes and the general state of their business, as well as the terms of the license arrangements.

If we are not successful in monetizing our intellectual property portfolio, we may never recoup our investments of time, capital and other resources in the development, maintenance, defense and enforcement of this portfolio, which could materially harm our financial condition and prospects.

We have incurred a material amount of indebtedness to fund our operations, the terms of which have required us to 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 under our convertible note issued to SVIC, our credit facility with SVB, and our new funding arrangement with TRGP. In connection with these debt and other arrangements, we have granted security interests to SVIC, SVB and TRGP in our various assets, such that all of our tangible and intangible assets, including our complete patent portfolio, are subject to one or more outstanding liens held by one or more of these parties.

The SVIC and SVB debt instruments and the TRGP investment agreement 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;

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- consolidate or merge;
- sell or exclusively license assets, including capital stock of subsidiaries;
- alter our business;
- change any provision of our organizational documents;
- engage in transactions with affiliates;
- make certain decisions regarding certain of our outstanding legal proceedings without consulting with or obtaining consent from certain of these parties; and
- pay dividends or make distributions.

The SVIC and SVB debt instruments and the TRGP investment agreement also include events of default, including, among other things, payment defaults, any breach by us of representations, warranties or covenants, certain bankruptcy events and certain material adverse changes. If an event of default were to occur under any of these instruments or agreements and we were unable to obtain a waiver for the default, the counterparties could, among other remedies, accelerate our obligations under the debt instrument or other agreement and exercise their rights to foreclose on their security interests, which would cause substantial harm to our business and prospects.

Additionally, incurrence and maintenance of this or other debt could have material adverse consequences on our business and financial condition, such as:

- requiring us to dedicate a portion of our cash flows 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 when needed, on acceptable terms or at all.

We are and expect to continue to be involved in legal proceedings at the ITC to try to stop allegedly infringing SK hynix RDIMM and LRDIMM products from entering the United States, as well as legal proceedings in U.S. and international courts to seek damages for the alleged patent infringement. Our involvement in these proceedings, as well as steps we have taken to implement certain of our strategies in connection with these proceedings, subject us to a

number of risks.

We have taken action to protect and defend our innovations by filing legal proceedings for patent infringement against SK hynix and two of its subsidiaries in the ITC, U.S. district court and the courts of Germany and the PRC. In our two separate ITC actions, we have requested exclusion orders that direct U.S. Customs and Border Protection to stop allegedly infringing SK hynix RDIMM and LRDIMM products from entering the United States. In our U.S. district court and international court proceedings, we are primarily seeking damages.

Our first ITC action was resolved in January 2018 with a final determination of no infringement of the patents asserted in this action. Although our second ITC action, which relates to different patents, and our U.S. and international

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court proceedings remain ongoing, the loss of the first ITC action could negatively impact our prospects for positive results in these other proceedings. Further, although standard procedures at the ITC afford us the opportunity to appeal the ITC's final determination and we are currently considering our options regarding any such appeal, any decision to pursue such an appeal would require significant resources, including capital expenditures and management attention. Moreover, if we do not appeal the final determination or if we appeal and lose, then we will have invested significant time and funds in this ITC action that will not be recovered with any cash returns.

Our remaining proceedings against SK hynix, as with any intellectual property litigation, are expensive and time-consuming, regardless of the merits of the claims, and could divert management's attention from our other activities. Even if we are successful at the ITC, we would then need to enforce the order, which could also be expensive, time-consuming and a diversion to management. In addition, lawsuits in the ITC and in courts are subject to inherent uncertainties due to the complexity of the technical issues involved and various other factors, and we may not be successful in any of our actions. For example, our second ITC action currently faces a ruling by the ITC on a motion for summary determination that SK hynix has filed, which, if granted, would end this action in its entirety in SK hynix's favor. Moreover, if we are countersued by SK hynix and lose the suit, we could be required to pay substantial damages or lose some of our intellectual property protections. Furthermore, we may not be able to reach a settlement with SK hynix to license our patent portfolio, and even if we are able to reach a settlement, the terms of the arrangement may not be as favorable as we anticipated. Any of the foregoing could cause us to incur significant costs, decrease the perceived value of our intellectual property and materially adversely affect our business, financial condition or results of operations.

We have taken steps intended to solidify our position and strategy in connection with our proceedings against SK hynix. In May 2017, we established a funding arrangement with TRGP, which generally provides that TRGP will directly fund the costs incurred by us or on our behalf in connection with certain of our SK hynix proceedings (including our first ITC action and our U.S. district court proceedings, but excluding our second ITC action and our proceedings in international courts), and in exchange for such funding, we have agreed to pay to TRGP the amount of its funding plus an escalating premium if and when we recover any proceeds from the funded proceedings, and we have granted to TRGP a first-priority lien on the claims underlying the funded proceedings and any proceeds received from the funded proceedings and a second-priority lien on our patents that are the subject of the funded proceedings. We established this funding arrangement in order to provide us with increased security that we will be able to vigorously pursue our claims against SK hynix through their final resolution, but the arrangement also involves certain risks, including, among others, our obligation to use a portion of any proceeds we may receive from these proceedings to repay the funded amounts at a premium, which premium would increase the longer the proceedings remain unresolved, and our obligation to consult with or obtain consent from TRGP in connection with certain decisions or other matters relating to the SK hynix proceedings. Further, our arrangement with TRGP only covers fees incurred in connection with certain of our outstanding proceedings against SK hynix, and we are responsible for funding costs related to our other outstanding proceedings and any future actions we may file. As a result, our ability to fund all of our proceedings against SK hynix may be limited to our own cash resources, in which case we may be forced to severely limit our pursuit of these claims and/or our other operations.

In addition, in April 2017, we adopted a rights agreement to implement a standard "poison pill." In general terms, for so long as the rights issued under the rights agreement are outstanding, the rights agreement prevents any person or group from acquiring a significant percentage of our outstanding capital stock or attempting a hostile takeover of our Company by significantly diluting the ownership percentage of such person or group. As a result, the rights agreement has a significant anti-takeover effect. Our board of directors approved the rights agreement as part of our strategy in connection with our proceedings against SK hynix, with the intent of disconnecting our market capitalization from the damages calculations and any settlement negotiations that may develop in connection with these proceedings. However, the rights agreement may not have the intended, or any, impact on these proceedings or any related settlement negotiations, but would have the anti-takeover effect of any standard "poison pill" and thus would involve the

risks associated with these anti-takeover effects, which are described elsewhere in these risk factors.

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

As is common in the semiconductor industry, we have experienced substantial litigation regarding patent and other intellectual property rights. We are currently involved in litigation and proceedings at the U.S. Patent and Trademark Office (“USPTO”) and Patent Trial and Appeal Board (“PTAB”) based on alleged third-party infringement of our patents, and lawsuits claiming we are infringing others’ intellectual property rights also have been and may in the future be brought against us.

Our business strategy includes litigating claims against others, such as our competitors, customers and former employees, to enforce our intellectual property, contractual and commercial rights, including, in particular, our patent portfolio and our trade secrets, as well as to challenge the validity and scope of the proprietary rights of others. This or other similar proceedings could also subject us to counterclaims or countersuits against us, or the parties we sue could seek to invalidate our patents or other intellectual property rights through reexamination or similar processes at the USPTO or similar bodies. Further, any legal disputes with customers could cause them to cease buying or using our products or the component products we resell or delay their purchase of these products and could substantially damage our relationship with them.

Moreover, our ability to continue to pursue this strategy depends on our ability to obtain and protect patents, which is governed by an uncertain process. In addition to the patent issuance process established by law and the procedures of the USPTO, we must also comply with administrative procedures of the JEDEC to protect 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. Any failure to comply with the USPTO’s or JEDEC’s administrative procedures could jeopardize our ability to claim that our patents have been infringed.

Making use of new technologies and entering new markets increases the likelihood that others might allege that our products or the component products we resell infringe their intellectual property rights. The likelihood of this type of lawsuit may also be increased due to the limited pool of experienced technical personnel that we can draw on 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 a number of our future employees will have similar work histories. Moreover, lawsuits of this type may be brought, even if there is no merit to the claim, as a strategy to prevent us from hiring qualified candidates, drain our financial resources and divert management’s attention away from our business.

Litigation is inherently uncertain. An adverse outcome in existing or any future litigation could force us to, among other things:

- relinquish patents or other protections of our technologies if they are invalidated, which would enable our competitors and others to freely use this technology;
- compete with products that rely on technologies and other intellectual property rights that we believe we have the right to protect from third-party use;
- accept terms of an arrangement to license our technologies to a third party that are not as favorable as we might expect;

- receive little or no returns for our time and capital investments in the litigation;
- 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, if we are found to infringe a third party's intellectual property;

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- seek a license from a third -party intellectual property owner to use its technology in our products or the component products we resell, which may not be available on reasonable terms or at all; or
- redesign any products that are claimed to be infringing a third party's intellectual property, which may not be possible to do in a timely manner, without incurring significant costs or at all.

Moreover, any litigation, regardless of its outcome, involves a significant dedication of resources, including time and capital, and diverts management's attention from our other activities. As a result, any current or future infringement claims or patent challenges by or against third parties, whether or not eventually decided in our favor or settled, could materially adversely affect our business, financial condition and results of operations. Additionally, the outcome of pending or future litigation and related patent reviews and reexaminations, as well as any delay in their resolution, could affect our ability to continue to sell our products, protect against competition in the current and expected markets for our products or license or otherwise monetize our intellectual property rights in the future.

The vast majority of our revenues in recent periods have been generated from resales of component products, including primarily products sourced from Samsung, and any decline in these product resales could significantly harm our performance.

The vast majority of our revenues in recent periods have been generated from resales of component products, including NAND flash and DRAM products. We resell these component products to end-customers that are not reached in the distribution models of the component manufacturers, including storage customers, appliance customers, system builders and cloud and datacenter customers.

These component product resales are subject to a number of risks. For example, demand for these products could decline at any time for a number of reasons, including, among others, changing customer requirements or preferences, product obsolescence, introduction of more advanced or otherwise superior competing products by our competitors, the ability of our customers to obtain these products or substitute products from alternate sources (including from the manufacturer directly), customers reducing their need for these products generally, or the other risk factors described in this report. We have no long-term agreements or other commitments with respect to sales of these or any of the other products we sell. As a result, any decrease in demand for these products from us would reduce our sale levels and could materially adversely impact our revenues.

In addition, we have historically obtained the majority of the component products we resell from Samsung. We may experience supply shortages from Samsung at any time and for a variety of reasons, including, among others, spikes in customer demand that cannot be satisfied, any problems that arise with Samsung's manufacturing operations or facilities that cause disruptions or delays, or any failure to comply with the terms of the JDLA regarding the supply of these products. If we choose, or if we are forced, to seek to supply the component products we resell from other suppliers, we may not be able to identify other suppliers that are available and able to produce the particular components with the specific product specifications and in the quantities our customers require, or we may not be able to make arrangements with any other suppliers in a timely manner to avoid delays in satisfying customer orders. Further, even if we are able to make arrangements with other suppliers for sufficient component products to replace any undersupply from Samsung, we may not be able to make these arrangements on financial and other terms comparable to those we have negotiated with Samsung under the JDLA. As a result, any inability to obtain sufficient component products from Samsung could increase our cost of sales for component product resales if we are forced to pay higher prices to obtain the products from other suppliers. Moreover, all of our supply arrangements for these

component products, including the terms of the JDLA and any arrangements we may establish with other suppliers, are subject to the other supply and manufacturing risks discussed elsewhere in these risk factors.

Increased reliance on product resales also has a substantial impact on our results of operations. Because the cost of the component products we purchase for resale is added to our cost of sales for these products, our gross margin on resales of component products is significantly lower than our gross margin on sales of our own memory subsystem products. As a result, increased resales of component products as a percentage of our total product revenues have a significant negative impact on our gross margin and gross profit. This gross margin and gross profit differential between

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memory product sales and component product resales would be amplified if our costs to purchase component products were to increase.

The occurrence of any one or more of these risks could cause our performance to materially suffer.

Our performance has historically been substantially dependent on sales of NVvault, and we may never be able to replace the revenues lost from the rapid decline in NVvault sales in recent periods.

We have historically been substantially dependent on sales of our NVvault NVDIMM. However, we have experienced a sharp decline in demand for and sales of NVvault in recent periods. This rapid decline has been due in large part to the loss of our former most significant NVvault customer, Dell, beginning in 2012. We have recognized no NVvault sales to Dell in the past several years, and we expect no future demand from Dell for these products.

Although we continue to pursue qualifications of NVvault with OEMs and potential new customer applications, we have had limited success with these efforts to date and may not be successful in the future. In addition, although we have introduced NVvault product extensions and other next-generation products, including most recently our HybriDIMM memory subsystem, the rate and degree of customer adoption of these products has been slower and smaller than expected, and these trends could continue or these products may never gain significant customer or market acceptance. We believe our future operating results will depend on our ability to grow demand for and sales of our memory subsystem products, by securing new NVvault customers or successfully commercializing NVvault product extensions and other next-generation products. However, we may not be successful in these pursuits. If we are not able to achieve these objectives, we may never be able to secure revenues and gross profits at levels sufficient to replace lost NVvault sales and our results of operations and prospects could be materially harmed.

We are subject to risks relating to our focus on developing our HybriDIMM and NVvault products for our target customer markets.

We have historically derived a substantial portion of our revenues from sales of our high performance modular memory subsystems to OEMs in the server, high-performance computing and communications markets. Although we expect these memory subsystems to continue to account for a portion of our revenues, we have experienced declines in sales of these products in recent periods, and these declines could continue or intensify in the future. We believe market acceptance of these products or derivative products that incorporate our core memory subsystem technology is critical to our success, and any continued decline in sales of these products could have a material adverse impact on our performance and long-term prospects.

We have invested significant research and development time and capital in the design of ASIC and hybrid devices, including our NVvault family of products and most recently our next-generation HybriDIMM memory subsystem. These products are subject to significant risks, including:

- we are dependent on a limited number of suppliers for the DRAM ICs, NAND flash and ASIC devices that are essential to the functionality of these products, and in the past we have experienced supply chain disruptions and

shortages of DRAM and NAND flash required to create these products as a result of issues that are specific to our suppliers or the industry as a whole;

- HybriDIMM and some of our other next-generation products may require additional time including the services and attention of key employees who have competing demands on their available time and may require capital investment to bring the products to market;
- our development and commercialization strategies for these products;
- we are required to demonstrate the quality and reliability of our products to and qualify them with our customers before purchases are made, which requires investments of time and resources in significant and unpredictable amounts prior to the receipt of any revenues from these customers; and

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· our NVvault products or other new products, such as HybriDIMM, may contain currently undiscovered flaws, the correction of which could result in increased costs and time to market. These and other risks associated with our memory subsystem products could impair our ability to obtain customer or market acceptance of these products or obtain such acceptance in a timely manner, which would reduce our achievable revenues from these products and limit our ability to recoup our investments in developing these technologies.

Additionally, if the demand for servers deteriorates, if the demand for our products to be incorporated in servers continues to decline, or if demand for our products deteriorates because customers in our other target markets change their requirements or preferences or otherwise reduce their need for these types of products generally, our operating results would be adversely affected, and we would be forced to diversify our product portfolio and our target customer markets in order to try to replace revenues lost from the further decreases in product sales. We may not be able to achieve this diversification, and any inability to do so may adversely affect our business, operating performance and prospects.

Sales to a small number of varying customers have historically represented a significant portion of our net product revenues, and the loss of, or a significant reduction in sales to, any one of these customers could materially harm our business.

Our target markets are characterized by a limited number of large companies, and consolidation in one or more of these markets may further increase this concentration. As a result, sales to small numbers of customers have historically represented a substantial portion of our net product revenues, and we expect this concentration to continue. Additionally, the composition of major customers and their respective contributions to our net product revenues have fluctuated and will likely continue to fluctuate from period to period as our existing and prospective customers progress through the life cycle of the products they produce and sell and experience resulting fluctuations in their product demand. We believe our performance depends in significant part on our ability to establish and maintain relationships with and effect substantial sales to our large customers.

We do not have long-term agreements with any of our customers and, as result, any or all of them could decide at any time to decrease, delay or discontinue their purchase of our products or the component products we resell. In addition, the prices customers pay for products are subject to fluctuations, and large or key customers may exert pressure on us to make concessions in the prices at which we sell products to them. Further, we may not be able to sell some of our products developed for one customer to a different customer because our products are often customized to address specific customer requirements, and even if we are able to sell these products to another customer, our margin on these products may be reduced. Additionally, although customers are generally allowed only limited rights of return after purchasing our products or the component products we resell, we may determine that it is in our best interest to accept returns from certain large or key customers even if we are not contractually obligated to accept them in order to maintain good relations with these customers. Any returns beyond our expectations could negatively impact our operating results. Moreover, because a few customers often account for a substantial portion of our net product revenues, the failure of any one of these customers to pay on a timely basis would negatively impact our cash flows. As a result, our net product revenues and operating results could be materially adversely affected by the loss of any of our customers, particularly our large or key customers, a decrease in product sales to any of our customers, including as a result of normal fluctuations in demand or other factors, reductions in the prices at which we sell products to any of our customers, including as a result of price concessions or general declines in average sale prices, or difficulties collecting payments from any of our customers.

Our ability to maintain or increase our product 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, our customers' continued incorporation of our products or the component products we resell into their systems, and our customers' sales activity and business results. Because of these

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and other factors, sales to these customers may not continue and the amount of such sales may not reach or exceed historical levels in any future period.

We are subject to risks of disruption in the supply of component products.

Our ability to fulfill customer orders for or produce qualification samples of our memory subsystem products, as well as orders for the component products we resell, is dependent on a sufficient supply of FPGAs, ASICs, DRAM ICs and NAND flash, which are essential components of our memory subsystems. We have no long term supply contracts for any of these component products. Further, there are a relatively small number of suppliers of these components, and we typically purchase from only a subset of these suppliers. As a result, our inventory purchases have historically been concentrated in a small number of suppliers, including an affiliate of Samsung, from which we obtained a large portion of our component products purchased for resale and our total inventory purchases in 2016 and 2017. We also use consumables and other components, including PCBs, to manufacture our memory subsystems, which we sometimes procure from single or limited sources to take advantage of volume pricing discounts.

From time to time, shortages in DRAM ICs and NAND flash have required some suppliers to limit the supply of these components. In the past, we have experienced supply chain disruptions and shortages of DRAM and NAND flash required to create certain of our memory subsystem products, and we have been forced to procure the component products we resell from other suppliers to the extent sufficient product is not available from Samsung to meet customer demand or in the event of other Samsung supply issues. We are continually working to secure adequate supplies of the components necessary to fill customers' orders in a timely manner. If we are unable to obtain a sufficient supply of DRAM ICs, NAND flash or other essential components to avoid interruptions or failures in the delivery of our products as required by our customers or the delivery of these components to customers to whom we resell them directly, these customers may reduce future orders for these products or not purchase these products from us at all, which could cause our net product revenues to decline and harm our operating results. In addition, our reputation could be harmed due to failures to meet our customers' demands and, even assuming we are successful in resolving supply chain disruptions, we may not be able to replace any lost business and we may lose market share to our competitors. Further, if our suppliers are unable to produce qualification samples of our products on a timely basis or at all, we could experience delays in the qualification process with existing or prospective customers, which could have a significant impact on our ability to sell our products. Moreover, if we are not able to obtain these components in the amounts needed on a timely basis and at commercially reasonable prices, we may not be able to develop or introduce new products, we may experience significant increases in our cost of sales if we are forced to procure components from alternative suppliers and are not able to negotiate favorable terms with these suppliers, or we may be forced to cease our sales of products dependent on the components or resales of the components we sell to customers directly.

Our dependence on a small number of suppliers and the lack of any guaranteed sources for the essential components of our products and the components we resell expose us to several risks, including the inability to obtain an adequate supply of these components, increases in their costs, delivery delays and poor quality. Additionally, our customers qualify certain of the components provided by our suppliers for use in their systems. If one of our suppliers experiences quality control or other problems, it may be disqualified by one or more of our customers. This would disrupt our supplies of these components, and would also reduce the number of suppliers available to us and may require that we qualify a new supplier, which we may not be able to do.

Declines in customer demand for our products in recent periods have caused us to reduce our purchases of DRAM ICs and NAND flash for use as components in our products. Such declines or other fluctuations could continue in the future. If we fail to maintain sufficient purchase levels with some suppliers, our ability to obtain supplies of these raw materials may be impaired due to the practice of some suppliers of allocating their products to customers with the highest regular demand.

Frequent technology changes and the introduction of next-generation versions of component products may also result in the obsolescence of our inventory on-hand, which could involve significant time and costs to replace, reduce our net product revenues and gross margin and adversely affect our operating performance and financial condition.

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

Our prospective customers generally test and evaluate our memory subsystems before 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. Even after our products are qualified with existing or new customers, the customer may take several months to begin purchasing the product or may decide not to purchase the product at all, as qualification does not ensure product sales. As a result, we could receive no or limited revenues from a customer even after our investment of time and resources in the qualification process with this customer, which could adversely affect our operating results.

Even after successful qualification and sales of our products to a customer, 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 these customers. Our net product revenues to these customers can decline significantly during this re-qualification process.

Likewise, changes in our products, our manufacturing facilities, our production processes or our component suppliers may require a new qualification process. For example, if our memory, NAND flash and DRAM component suppliers discontinue production of these components, it may be necessary for us to design and qualify new products for our customers. As a result, some customers may require 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 forecasts 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 or other difficulties in the qualification process could result in an inability to keep pace with rapid technology change or new competitive products. If we experience delays or do not succeed in qualifying a product with an existing or prospective customer, we would not be able to sell that product to that customer, which may result in excess and obsolete inventory that we may not be able to sell to another customer and could reduce our net product revenues and customer base, any of which could materially harm our operating results and business.

If we are unable to timely and cost-effectively develop new or enhanced products that achieve customer and market acceptance or technologies we can monetize, our revenues and prospects could be materially harmed.

Our industry is characterized by rapid technological change, evolving industry standards and rapid product obsolescence. As a result, continuous development of new technology, processes and product innovations is necessary in order to be successful. We believe the continued and timely development of new products and technologies and improvement of existing products and technologies are critical to our business and prospects for growth.

In order to develop and introduce new or enhanced products and technologies, we need to:

retain and continue to attract new engineers with expertise in memory subsystems and our key technology competencies;

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- identify and adjust to the changing requirements and preferences of our existing and potential future customers and markets;
- identify and adapt to emerging technological trends and evolving industry standards in our markets;
- continue to develop and enhance our design tools, manufacturing processes and other technologies on which we rely to produce new products or product enhancements;
- design and introduce cost-effective, innovative and performance-enhancing features that differentiate our products and technologies from those of our competitors;
- secure licenses to enable us to use any technologies, processes or other rights essential to the manufacture or use of any new products or product enhancements we may develop, which licenses may not be available when needed, on acceptable terms or at all;
- maintain or develop new relationships with suppliers of components required for any new or enhanced products and technologies;
- qualify any new or enhanced products for use in our customers' products; and
- develop and maintain effective commercialization and marketing strategies.

We may not be successful at any of these activities. As a result, we may not be able to successfully develop new or enhanced products or technologies or we may experience delays in this process. Failures or delays in product development and introduction could result in the loss of, or delays in generating, net products sales or other revenues and the loss of key customer relationships. Even if we develop new or enhanced products or technologies, they may not meet our customers' requirements, gain market acceptance or attract monetization opportunities, as our product and technology development efforts are inherently risky due to the challenges of foreseeing changes or developments in technology, predicting changes in customer requirements or preferences or anticipating the adoption of new industry standards. Moreover, we have invested significant resources in our product and technology development efforts, which would be lost if we fail to generate revenues from these efforts. If any of these risks occur, our revenues, prospects and reputation could be materially adversely affected.

We face intense competition in our industry, and we may not be able to compete successfully in our target markets.

Our products are primarily targeted to OEMs in the server, high-performance computing and communications markets. In addition, we resell certain component products to storage customers, appliance customers, system builders and cloud and datacenter customers. These markets are intensely competitive, as numerous companies vie for business opportunities at a limited number of large OEMs and other customers. We face competition from DRAM suppliers, memory module providers and logic suppliers for many of our products, including EXPRESSvault, NVvault and HybriDIMM. We also face competition from the manufacturers and distributors of the component products we resell to customers, as these manufacturers and distributors could decide at any time to sell these component products to these customers directly. 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 the components we resell to them, or could develop internal solutions or enter into strategic relationships with, or acquire, other high-density memory module or component providers. Any of these actions could reduce our customers' demand for our products or the component products we resell. Additionally, some of our significant suppliers could choose to sell component products to customers directly, which would adversely affect our ability to resell these products, or may be choose to manufacture competitive memory subsystem products themselves or reduce our supply of

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essential components of our products, which could adversely affect our ability to manufacture and sell our memory subsystems.

We believe our ability to compete in our current target markets and potential future markets will depend in part on our ability to successfully and timely develop, introduce and sell at attractive prices new and enhanced products or technologies and otherwise respond to changing market requirements, which we may not be able to do faster and better than our competitors. Moreover, many of our competitors have substantially greater financial, technical, marketing, distribution and other resources, broader product lines, lower cost structures, greater brand recognition, more influence on industry standards, more extensive or established patent portfolios and longer standing relationships with customers and suppliers. We may not be able to compete effectively against any of these organizations. If we are unable to compete effectively, then our market position and prospects could deteriorate and our revenues could decline.

If our proprietary rights are not protected, 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 and other proprietary rights. We have submitted a number of patent applications regarding our proprietary processes and technology, many of which have resulted in issued patents. For our pending patent applications, it is uncertain when or if any of the claims in these applications will be allowed or result in issued patents, in which case the technologies or processes sought to be patented would remain unprotected from use by third parties. In addition, although we intend to continue filing patent applications with respect to new processes and technologies we develop, patent protection may not be available for some of these processes or technologies. Further, even if we are successful in obtaining patent protection, these protections could be limited in scope by the USPTO, a court or applicable foreign authorities or challenged by third parties by way of review or reexamination proceedings and subsequently invalidated, which would reduce the protections these patents are able to provide. Moreover, patent protection is limited as to duration and all of our issued patents will eventually expire, at which time the previously protected technologies would become widely available for use by third parties, including our competitors.

Despite our efforts to protect our intellectual property rights, these efforts may not:

- prevent challenges to or the invalidation or circumvention of our intellectual property rights;
- keep our competitors or other third parties from independently developing similar products or technologies, duplicating, reverse engineering or otherwise using our products or technologies without our authorization 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.

Moreover, monitoring for any unauthorized use of our technologies is costly, time-consuming and difficult. 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, if any of our issued patents or other intellectual property protections are limited, invalidated or circumvented by third parties, or if we are not able to obtain extensions of existing patents upon their expiration or issuance of new patents to maintain protections provided by expiring patents, we could face increased competition for our products and technologies and be unable to execute on our

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strategy of monetizing our intellectual property. Any of these outcomes could significantly harm our business, operating results and prospects.

Our operating results may be adversely impacted by worldwide economic and political uncertainties and specific conditions in the markets we address and in which we or our strategic partners or competitors do business, including the cyclical nature of and volatility in the memory market and semiconductor industry.

Changes in domestic and global economic and political conditions make it 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 or decrease spending on our products and the products we resell. For instance, the current political instability in Korea could impact our operations and financial condition as a result of our relationships with Samsung, a South Korea-based company, as a key supplier, as well as our ongoing legal proceedings against SK hynix.

In addition, sales of our products and the products we resell are dependent on demand by customers in our target markets. These markets are characterized by wide fluctuations in product supply and demand and have been cyclical in the past, which may result in substantial period-to-period fluctuations in our operating results. In addition, these markets have in the past experienced significant downturns, often connected with or in anticipation of maturing product cycles, reductions in technology spending and declines in general economic conditions. During these downturns, product demand diminishes, production capacity exceeds demand, inventory levels increase and average sale prices decline, all of which would materially adversely impact our business and operating results. In addition, because many of our costs and operating expenses are relatively fixed, if we are unable to control our expenses adequately in response to reduced product demand and sales, our gross margins and cash flows would be negatively impacted. Further, such a downturn could decrease the perceived value of our intellectual property portfolio and reduce our ability to pursue our intellectual property monetization objectives.

During challenging economic times, our customers may face challenges gaining timely access to sufficient credit, which could impair their ability to make timely payments to us. This may negatively affect our liquidity and cash flows and require us to increase our allowance for doubtful accounts. 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 generally or in our customer markets. If the economy or markets in which we operate experience such a slowdown, our business, financial condition and results of operations could be materially and adversely affected. The combination of our lengthy sales cycle coupled with any challenging macroeconomic conditions could compound the negative impact of any such downturn 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 requirements, 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 we will seek and accept, production schedules, component procurement, personnel needs and other resource requirements based on our estimates of customer demand. We do not have long-term agreements with any of our customers. Instead, our product sales are made primarily pursuant to stand-alone purchase orders that we often receive no more than two weeks in advance of the desired delivery date and that may be rescheduled or cancelled on relatively short notice. The short-term nature of the commitments by many of our customers and our customers' ability to cancel or defer purchase orders for any reason reduces our backlog of firm orders and our ability to accurately estimate future customer requirements for our products or the component products we resell. These facts, combined with the short turnaround times that apply to

most orders, makes it difficult to predict our production and inventory needs and allocate production capacity and capital for inventory purchases effectively. As a result, we attempt to forecast the demand for the components needed to manufacture our products and to resell to customers directly, but any such forecasts could turn out to be wrong. Further, lead times for components vary

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significantly and depend on various factors, such as the specific supplier and the demand and supply for a component at any given time.

Our production expense and component purchase levels are to a large extent fixed in the short term. As a result, we may 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 component or finished goods inventory, which may not be able to be used in other products or resold and may become obsolete before any such use or resale. If there is a subsequent decline in the prices of components, the value of our inventory would fall and we may be required to write-down the value of our component inventory, which may result in a significant increase in our cost of sales and decrease in our gross margin. In the past, we have had to write-down inventory due to obsolescence, excess quantities and declines in market value below our costs. As a result, any significant shortfall of customer orders in relation to our expectations could hurt our operating results, cash flows and financial condition.

Conversely, any rapid increases in demand by our customers could strain our resources. If we underestimate customer demand, we may not have sufficient inventory of necessary components on hand to meet that demand and we may need to try to procure additional quantities, which may not be available or may only be available at high prices or on otherwise unfavorable terms. We also may not have sufficient manufacturing capacity at any given time to meet any demands for rapid increases in production of our memory subsystem products. Any shortages of inventory or manufacturing capacity could lead to delays in the delivery of products, which may force us to forego sales opportunities, reduce our net product revenues and damage our customer relationships.

In addition, if our product demand forecasts are wrong, we may understate or overstate the provision required for excess and obsolete inventory. 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 the determination. Conversely, 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 the inventories are sold.

Declines in our average sale prices, driven by volatile prices for components and other factors, may result in declines in our revenues and gross profit.

Our industry has historically been characterized by declines in average sale prices. If sale price declines are not offset by corresponding decreases in costs or increases in sales volume or sales of products with higher margins, these sale price declines could have a material adverse effect on our operating results.

The prices customers pay for the products we sell can fluctuate due to many factors, including, among others, competitive conditions in our key customer markets, changes in customer requirements or preferences, volatility in the market prices for DRAM ICs, NAND flash and other component products, and changes in manufacturing efficiencies or capacities. Market prices for component products have historically constituted a substantial portion of the total cost of our memory subsystems and in recent periods have constituted the vast majority of the cost of resales of these products to customers directly. As a result, fluctuations in the prices for these component products, due to overcapacity in worldwide supply or increased manufacturing efficiencies, implementation of new manufacturing processes or expansion of manufacturing capacity by component suppliers, among other factors, significantly impact our costs to sell our products or component products.

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. As a result, if market prices for essential components increase, we generally cannot pass the price increases through to our customers for products purchased under an existing purchase order. Consequently, we are exposed to the risks associated with the volatility of prices for these components and our cost of sales could increase and our gross margins could decrease in the event of sudden price increases. Alternatively,

if there are declines in the prices of these components, we may be required to reduce our selling prices for subsequent purchase orders, which may result in a decline in our net product revenues.

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Our manufacturing operations involve significant risks.

We maintain a manufacturing facility in the PRC at which we produce most of our products. These manufacturing activities require significant resources to maintain. For instance, we must continuously review and improve our manufacturing processes in order to maintain satisfactory manufacturing yields and product performance, try to lower our costs and otherwise remain competitive. As we manufacture new and more complex products, the risk of encountering delays, difficulties or higher costs increases. In addition, the start-up costs 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.

Additionally, we could experience a prolonged disruption, material malfunction, interruption or other loss of operations at our manufacturing facility, or we may need to add manufacturing capacity to satisfy any increased demand for our products. Under these circumstances, we may be forced to rely on third parties for our manufacturing needs, which could increase our manufacturing costs, decrease our gross margin, decrease our control over manufacturing processes, limit our ability to satisfy customer requirements and demand and delay new product development until we could secure a relationship with a third-party manufacturer, which we may not be able to do in a timely manner, on acceptable terms or at all. If any of these risks occur, our operations, performance and customer relationships could be severely harmed.

We also may need to expand our existing manufacturing facility or establish a new facility in the future. Any need to expand or replace our manufacturing facility would be expensive and time-consuming and could also subject us to factory audits by our customers that could themselves result in delays, unexpected costs or customer losses if we cannot meet the standards of any such audits. Further, we may not be able to replace or increase our manufacturing capacity at all. The occurrence of any of these events could have a material adverse effect on our business, financial condition and results of operations.

We depend on third parties to design and manufacture components for our products and the component products we resell, which exposes us to risks.

Components that are used in our products, as well as all of the component products we resell, are designed and manufactured by third parties. In addition, some of our memory subsystem products rely on significantly customized components. The ability and willingness of third parties to enter into these engagements with us and perform in accordance with these engagements is largely outside our control. If one or more of our design or manufacturing partners experiences a manufacturing disruption, fails to dedicate adequate resources to the production of the components we use in our products or the components we resell, experiences financial instability or otherwise fails to perform its obligations to us 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 and our business and prospects could be materially harmed. In the event of any failure by our component manufacturers, we may have no readily available alternative source of supply for these components, since, in our experience, the lead time needed to establish a relationship with a new design or manufacturing partner is substantial, and the time for our OEM customers to re-qualify our products with components from a new vendor is also significant. Additionally, even if an alternative manufacturer is available, we may not be able to engage the manufacturer on acceptable terms, which could result in increased costs, timing requirements or other adverse changes. Further, we may not be able to redesign the customized components used in our products to be manufactured by a new manufacturer, in which case we could infringe on the intellectual property of our current design or manufacturing partner when we manufacture the products with a new design or manufacturing partner. Such an occurrence could force us to stop selling certain of our products or could expose us to lawsuits, license payments or other liabilities.

Our dependence on third-party manufacturers exposes us to many other risks, including, among others: reduced control over delivery schedules, quality, manufacturing yields and costs; the potential lack of adequate capacity during periods of excess demand; limited warranties on products supplied to us; and potential infringement or misappropriation of our intellectual property or the intellectual property of others. We are dependent on our manufacturing partners to manufacture components with acceptable quality and manufacturing yields, to deliver these components to us on a

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timely basis and at an acceptable cost and to allocate a portion of their manufacturing capacity sufficient to meet our needs. However, these component manufacturers may not be able to achieve these tasks. Additionally, our manufacturing partners may not continue to devote adequate resources to produce our products or the component products we resell, or continue to advance the process design technologies on which the customer qualifications of our products are based. Any of these risks could limit our ability to meet customer demand and materially adversely affect our business and operating results.

If our products or the component products we resell do not meet quality standards or are defective or used in defective systems, we may be subject to quality holds, warranty claims, recalls or liability claims.

Our customers require our products and the component products we resell to meet strict quality standards. If the products fail to meet these standards, our customers may discontinue purchases from us until we are able to resolve the quality issues that are causing these failures, which we may not be able to do. These “quality holds” can be costly and time-consuming to resolve. In addition, if the products we sell are defectively manufactured, contain defective components or are used in defective or malfunctioning systems, we could be subject to warranty and product liability claims, product recalls, safety alerts or advisory notices.

Although we generally attempt to contractually limit our exposure to incidental and consequential damages, if these contract provisions are not enforced or if liabilities arise that are not effectively limited, we could incur substantial costs in defending or settling product liability claims. While we currently have product liability insurance, it may not provide coverage under certain circumstances and it may not be adequate to satisfy claims made against us. We also may be unable to maintain insurance in the future at satisfactory rates or in adequate amounts.

Warranty and product liability claims, product “quality holds,” product recalls, safety alerts or advisory notices, regardless of their coverage by insurance or their ultimate outcome, could have a material adverse effect on our business, performance and financial condition, as well as our ability to attract and retain customers.

If a standardized memory solution that addresses the demands of our customers is developed, our net product revenues 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 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 operating 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 these demands. Until fully implemented, any next generation of products may constitute a significantly smaller market, which could reduce our revenues and harm our competitive position.

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, employment, class action, whistleblower and other litigation and claims, as well as 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 subject us to monetary damages or other liabilities and have a material adverse effect on our business, results of operations and financial condition.

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

As is common in our industry, we have 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 these indemnities varies, the duration of these indemnities is generally perpetual after execution of an agreement, and the maximum potential amount of future payments we could be required to make under these indemnities is often unlimited. Any indemnification claims by customers could require us to incur significant legal fees and could potentially result in our payment of substantial damages, and our insurance generally would not cover these fees or damages. As a result, the occurrence of any of these risks could have a material adverse effect on our business and results of operations.

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

To date, we have been highly dependent on the experience, relationships and technical knowledge of certain key employees. We believe our future success will be dependent on our ability to retain the services of these key employees, develop their successors and properly manage the transition of their roles should departures occur. The loss of these key employees or their inability to continue to provide their services could delay the development and introduction of new or enhanced products or technologies, negatively impact our ability to sell our existing products, limit our ability to pursue our other business goals and strategies and otherwise harm our business. We do not have employment agreements with any of our employees other than Chun K. Hong, our President, Chief Executive Officer and Chairman of our board of directors, and as a result most of our employees may terminate their employment with us at any time. We maintain “Key Man” life insurance on Mr. Hong, but we do not carry “Key Man” life insurance on any of our other 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 these 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 personnel with the skills necessary to keep pace with the evolving technologies in our markets, our ability to continue to provide our existing products and to develop new or enhanced products and technologies would be negatively impacted, which could harm our business. In addition, a general shortage of experienced engineers or other technical personnel could lead to increased recruiting, relocation and compensation costs to attract new recruits, which may increase our operating expenses or make these hires more difficult or impossible if increased recruiting costs exceed our resources.

A significant portion of our workforce consists of contract personnel. We invest considerable time and expense to train these contract personnel; however, they typically may terminate their relationships with us at any time. As a result, we may experience high turnover rates in this contract personnel workforce, which may require us to expend additional resources to attract, train and retain replacements. Additionally, if we convert any of these contract personnel to permanent employees, we may have to pay finder’s fees to the contract agency. These risks associated with our contract personnel workforce may involve increased costs or delays or failures in meeting customer requirements or developing new or enhanced products or technologies, any of which could materially adversely affect our business and operating performance.

We rely on our internal and third-party sales representatives to market and sell our products and the component products we resell, and any failure by these representatives to perform as expected could reduce our sales.

We primarily market and sell our products and the component products we resell through a direct sales force and a network of independent sales representatives. We have expended significant resources to build our internal sales and marketing function, but compared to many of our competitors, we have relatively little experience creating a sales and marketing platform and developing a team to implement it. We may be unsuccessful in these efforts.

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Our sales representatives generally may terminate their relationships with us at any time. As a result, our performance depends in part on our ability to retain existing and attract additional sales representatives that will be able to effectively market and support our products or the component products we resell, especially in markets in which we have not previously distributed these products. Our efforts to attract, train and retain these sales representatives to be knowledgeable about our industry, products and technologies are costly and time-consuming. If these efforts fail, our investments in these sales representatives may not produce the expected or any benefits and our ability to market and sell our products or the component products we resell may be limited, which could materially harm our financial condition and operating results. Further, our reliance on independent sales representatives subjects us to risks, as we have very little control over their activities and they are generally free to market and sell other, potentially competing, products. As a result, these independent sales representatives could devote insufficient time or resources to marketing our products or the component products we resell, could market them in an ineffective manner or could otherwise be unsuccessful in selling adequate quantities of these products.

We are exposed to additional business, regulatory, political, operational, financial and economic risks related to our international sales and operations.

We sell products to foreign corporations and deliver 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 that performs most of the manufacturing activities for our memory subsystem products.

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 experience and that may impose materially different requirements. Further, the geographic distance from our headquarters in Irvine, California, compounds the difficulties of maintaining a manufacturing operation in the PRC. For instance, we may not be able to maintain the desired amount of control over production capacity and timing, inventory levels, product quality, delivery schedules, manufacturing yields or costs. Moreover, we will need to continue to overcome language and cultural barriers to effectively conduct these international operations. Failures in any of these areas could result in legal consequences or production delays and increased turnaround times, which could adversely affect our business. In addition, changes to the labor or other laws of the PRC or the economic and political conditions in the PRC, including increased industrialization in recent years, could increase the costs of employing a local workforce or conducting our manufacturing operations in the PRC. Any of these factors could negatively impact any cost savings we experience from locating our manufacturing facility in the PRC. Additionally, our management has limited experience creating or overseeing foreign operations generally, and the ongoing administration and operation of our PRC facility may require substantial amounts of time and attention by our management team, particularly if we encounter operational, legal or cultural difficulties or disruptions at our PRC facility.

To date, all of our net product revenues have been denominated in U.S. dollars. In the future, however, some of our net product revenues may be denominated in Chinese Renminbi (“RMB”). The Chinese government controls the procedures by which RMB is converted into other currencies, which 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 additional restrictions on currency conversion, our operations and our operating results could be negatively impacted. In addition, Chinese law imposes restrictions on the movement of funds outside of the PRC. If we need or decide to repatriate funds from our Chinese operations, we would be required to comply with the procedures and regulations of applicable Chinese law, and any failure to so comply could adversely affect our liquidity and financial condition. Further, if we are able to repatriate funds from our Chinese operations, these funds would be subject to U.S. taxes. In addition, fluctuations in the exchange rate between RMB and U.S. dollars may adversely affect our expenses, the value of our assets and liabilities and the comparability of our period-to-period results.

Our international operations and sales are subject to a number of additional risks, including, among others, timing and availability of export licenses; difficulties in accounts receivable collections; difficulties managing distributors; lack of a significant local sales presence in a number of markets; difficulties obtaining government approvals; compliance with anti-bribery, data protection and other applicable U.S. and foreign laws, including the U.S. Foreign Corrupt Practices Act and similar anti-bribery laws in the non-U.S. jurisdictions in which we operate, as well as

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a wide variety of other complex foreign laws, regulations and treaties; and potentially adverse tax consequences. In addition, the United States or foreign countries may implement quotas, duties, tariffs, taxes or other charges or restrictions on the importation or exportation of our products or the component products we resell, which could lead to a reduction in sales and profitability in that country. This risk of increased trade barriers or charges has become more pronounced following the results of the 2016 U.S. presidential election, as the trade policies of the current U.S. presidential administration, including withdrawal from the Trans-Pacific Partnership and proposed revision to the North American Free Trade Agreement, could threaten or otherwise have a significant negative effect on our ability to continue to conduct our international operations in the same manner and at the same costs as we have in the past.

In addition, international turmoil and the threat of future terrorist attacks have contributed to an uncertain political and economic climate, both in the United States and globally, and have negatively impacted the worldwide economy. The economies of the PRC and other countries in which we make sales have been volatile in recent years, resulting in significant fluctuations in local currencies and other instabilities. These conditions could continue or worsen, which could adversely affect our foreign operations and our performance.

The occurrence of any of these risks related to our international operations, including our manufacturing facility in the PRC and our international sales, could have a material adverse effect on our business, financial condition and prospects for growth.

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 our small number of component suppliers, including Samsung for many of the component products we resell, a disruption resulting from equipment or power failures, quality control issues, human errors, government intervention or natural disasters, including earthquakes and floods, could require significant costs to repair and could interrupt or interfere with product manufacture and sale and cause significant delays in product shipments, which could harm our customer relationships, financial condition and results of operations. In the past, our PRC facility has suffered water damage as a result of heavy rains and floods, which forced us to temporarily halt manufacturing at the facility while necessary repairs or equipment replacements were made. This incident caused us to incur additional expenses because we were forced to shift our manufacturing activities to a third-party facility in the PRC to mitigate the disruption in product shipments to our customers. If manufacturing at the PRC facility is disrupted for similar or other reasons in the future, we may again be subject to increased expenses in order to engage a third-party manufacturer, or, if we are not able to secure alternative manufacturing capabilities, our ability to sell products and our relationships with our customers could be materially harmed. Additionally, we may be forced to bear significant costs in order to repair any damage to our manufacturing equipment and facility. Any of these outcomes could have a material adverse effect on our business and results of operations.

Difficulties with our global information technology systems, including any unauthorized access, could harm our business.

We store key data about our business, including certain customer data, information about our and our customer's intellectual property and other proprietary information, on our global information technology systems. Any failure or malfunctioning of our global information technology systems, errors or misuse by system users, difficulties migrating stand-alone systems to our centralized systems or inadequacy of the systems in addressing the needs of our operations could disrupt our ability to timely and accurately manufacture and ship products, divert management's and key employees' attention from other business matters and involve significant costs and other resources to repair or otherwise resolve, any of which could have a material adverse effect on our business, financial condition and results of operations. Any such event could also disrupt our ability to timely and accurately process, report and evaluate key operating metrics and key components of our results of operations, financial position and cash flows and could

adversely affect our ability to complete other important business processes, such as maintenance of our disclosure controls and procedures and internal control over financial reporting.

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While our information technology systems include security measures designed to prevent unauthorized access, employee error, employee malfeasance or other causes, including intentional misconduct by computer hackers, could circumvent these measures and result in unauthorized access to these systems. Because the techniques used to gain unauthorized access to information technology systems evolve frequently and often are not recognized until successful, we may be unable to anticipate these techniques or implement adequate preventative measures in a timely manner. Any security breach could require significant resources to correct, if correction is possible, and could result in disruption to our business, misappropriation or loss of data, loss of confidence in us by our customers, damage to our reputation and legal liability. Further, any failure to implement appropriate security measures to protect our information or any breach or other failure of our systems that results in unauthorized access, manipulation, disclosure or loss of this information could result in our violation of any U.S. or foreign data protection laws that are applicable to us. These laws and their interpretation and application are constantly evolving, and they could be interpreted and applied in a manner that is inconsistent with our current practices or they could become more stringent over time. Efforts to comply with applicable data protection laws or any new interpretations of their application could involve significant time and substantial costs or require us to change our business practices and compliance procedures, and any failures to so comply could subject us to substantial civil or criminal fines or sanctions. Any of these outcomes could have a material negative impact on our business, performance and prospects.

Our failure to comply with environmental and other applicable 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 laws and regulations relating to the protection of the environment, including laws governing the discharge of pollutants into the air and water, the management and disposal of hazardous substances and wastes and the clean-up of contaminated sites. 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 these and other 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.

We also may be subject to a variety of laws and regulations relating to other matters, including workplace health and safety, labor and employment, foreign business practices (including the U.S. Foreign Corrupt Practices Act and applicable foreign anti-bribery laws), data protection, public reporting and taxation, among others. It is difficult and costly to manage the requirements of every authority having jurisdiction over our various activities and to comply with their varying standards. Additionally, any changes to existing regulations or adoption of new regulations may result in significant additional expense to us or our customers. Further, our failure to comply with any applicable laws and regulations may result in a variety of administrative, civil and criminal enforcement measures, including monetary penalties or imposition of sanctions or other corrective requirements, any of which could materially adversely affect our reputation and our business.

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.

The U.S. Congress has enacted laws, and the SEC has adopted rules, requiring disclosure of specified minerals, known as conflict minerals, that are necessary to the functionality or production of products manufactured or contracted to be manufactured by public companies. These laws and rules require companies to verify and disclose whether or not such minerals, as used in a company’s products or their manufacture, originate from the Democratic

Republic of Congo or an adjoining country. Because our products contain certain conflict minerals and we or our manufacturers use these conflict minerals in the manufacture of our products, we are required to comply with these laws and disclosure rules. To comply, 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

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in or used to manufacture our products. Such due diligence must conform to a nationally or internationally recognized due diligence framework. We are also required to file a disclosure report with the SEC each year relating to our conflict mineral use.

The due diligence activities required to determine the source and chain of custody of minerals contained in our products or used in their manufacture are time-consuming and may result in significant costs. Due to the size and complexity of our supply chain, we face significant challenges verifying the origins of the minerals used in our products or their manufacture. Further, these rules could affect the availability in sufficient quantities and at competitive prices of certain minerals used in our products and their manufacture, which could result in increased material and component costs and additional costs associated with potential changes to our products, processes or sources of supply. Additionally, if we are unable to sufficiently verify the origin of the minerals used in our products through the due diligence measures we implement, we may not be able to satisfy customer preferences or requirements regarding the use of conflict minerals in the products they purchase, which could place us at a competitive disadvantage.

Our internal control 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 control over financial reporting and require management to report on the effectiveness of this internal control as of the end of each fiscal year. In addition, if and when we are no longer a “smaller reporting company” under applicable SEC rules, Section 404 will require us to obtain an attestation report from our independent registered public accounting firm as to our internal control over financial reporting.

Effective internal control is necessary for us to produce accurate and reliable financial reports and is important in our efforts to prevent financial fraud. In the course of our Section 404 evaluations, we or our independent registered public accounting firm may identify significant deficiencies or material weaknesses in our internal control over financial reporting. If we fail to maintain an effective system of internal control over financial reporting or if management or our independent registered public accounting firm discover significant deficiencies or material weaknesses, we may be unable to produce accurate and reliable financial reports or prevent fraud, which could result in a loss of customer or investor confidence in us or our public disclosures and negatively impact our stock price. Any of these outcomes could harm our financial condition and results of operations.

Further, our Section 404 evaluations may lead us to conclude that enhancements, modifications or changes to our internal control over financial reporting are necessary or desirable. Implementing any such changes would divert the attention of management, involve significant time and costs and negatively impact our financial reporting functions during the transition, any of which could have a material negative effect on our results of operations and financial condition.

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 operating 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, which we may not be able to do in a timely or cost-effective manner. In addition, our management team has relatively limited experience managing a rapidly growing business. As a result, they may not be able to manage any future growth we may experience. A 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 and results of operations.

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

From time to time, we evaluate opportunities to acquire businesses or technologies or pursue other strategic transactions or relationships, including collaboration or joint development arrangements, that might complement our current product offerings or enhance our intellectual property portfolio or technical capabilities. We have no experience acquiring other businesses or technologies.

Acquisitions and other strategic transactions or relationships entail a number of risks that could adversely affect our business and operating results, including, among others:

- difficulties 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 daily operations of our business;
- insufficient increases in revenues to offset increased expenses associated with an acquisition or strategic transaction or relationship;
- difficulties retaining business relationships with our existing suppliers and customers or the suppliers and customers of an acquired company;
- overestimation of potential synergies or other benefits, or a delay in realizing these synergies or other benefits;
- entering markets in which we have no or limited experience and in which competitors have stronger market positions;
- the potential loss of key employees of our Company or an acquired company;
- exposure to contingent liabilities of an acquired company;
- depletion of cash resources to fund an acquisition or other strategic transaction or establish a strategic relationship, or dilution of existing stockholders or increased leverage relative to our earnings or to our equity capitalization if we issue debt or equity securities for these purposes;
- adverse tax consequences; and
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incurrence of material charges, such as depreciation, deferred compensation charges, in-process research and development charges, the amortization of amounts related to deferred stock-based compensation expense and identifiable purchased intangible assets or impairment of goodwill.

If any of these risks occur, we may not be able to realize the intended benefits of an acquisition or strategic transaction or relationship, and our operating results, financial condition and business prospects could be materially negatively affected.

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Risks Related to Our Common Stock

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

Our common stock has been publicly traded since November 2006. The price and trading volume of our common stock are volatile and have in the past fluctuated significantly. This volatility could continue, in which case an active trading market in our common stock may not be sustained and stockholders may not be able to sell their shares at a desired time or a desired price.

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;
- investor perceptions of us and the industry in which we operate;
- our ability to meet investor and analyst expectations for our operating results;
- the availability and level of research coverage of and market-making in our common stock;
- changes in buy/sell recommendations by analysts;
- any financial projections we may provide to the public, any changes to these projections or our failure to meet these projections;
- our announcement of significant strategic transactions or relationships or the initiation of legal proceedings, including patent infringement actions;
- the results of legal proceedings in which we are involved;
- general political, economic and market conditions, including volatility or uncertainty in these conditions; and
- the other risk factors described in this report.

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, at times irrespective of the state of the business of any particular company. These fluctuations may adversely affect the market price of our common stock. Further, following periods of volatility in the overall market and the market price of a particular company's securities, securities litigation can sometimes be instituted against the company. Securities litigation, like other types of litigation, is expensive and time-consuming, and if such litigation is instituted against us in the future, we may incur substantial costs, management's attention and resources may be diverted, and we could be subject to damages in the event of

unfavorable results.

We are not in compliance with certain Nasdaq listing requirements, and we may not be able to maintain our Nasdaq listing.

On September 26, 2017, we received a letter from the Nasdaq Stock Market (“Nasdaq”) notifying us that, because the bid price of our common stock closed below \$1.00 per share for 30 consecutive business days, we are no longer in compliance with Nasdaq’s minimum bid price rule, which is a requirement for continued listing on the Nasdaq Capital Market. We have also experienced several other periods of noncompliance with this rule in recent years,

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including during 2015 and into early 2016 and during April and May of 2017. On January 3, 2018, we received another letter from Nasdaq notifying us that, because the market value of our common stock fell below a minimum of \$35.0 million for a period of 30 consecutive business days, we are no longer in compliance with Nasdaq's market value of listed securities rule, which is also a requirement for continued listing on the Nasdaq Capital Market. Because of our failure to comply with the market value of listed securities rule and certain other Nasdaq continued listing standards, we were not automatically eligible for a 180-day extension of the deadline to regain compliance with the minimum bid price rule, which was passed on March 26, 2018. As a result, our common stock became subject to delisting from the Nasdaq Capital Market on that date, and we received a letter from Nasdaq notifying us of such delisting determination on March 29, 2018. We have elected to appeal the delisting determination to a Nasdaq Hearings Panel, in which we are requesting additional time to regain compliance with these Nasdaq rules, and our common stock will remain listed on the Nasdaq Capital Market pending the outcome of the appeal. However, the likelihood of success on the appeal is unpredictable and it could be denied, in which case our common stock would be delisted from the Nasdaq Capital Market shortly after the appeal decision is made. Moreover, even if the appeal is successful, we would still be required to regain compliance with these Nasdaq rules and all other continued listing requirements by a new future deadline, which we may not be able to do.

If our appeal of the delisting determination is not successful, or if our appeal is successful but we fail to regain compliance with all applicable Nasdaq rules and requirements by the new deadline, then our common stock would be delisted from trading on the Nasdaq Capital Market. Further, even if we are able to regain compliance by any new deadline but then again fail to comply with these or any other Nasdaq requirements in the future, then we would receive additional deficiency letters from Nasdaq and our common stock could be subject to delisting from the Nasdaq Capital Market at a later date. Any such delisting would cause our common stock to be classified as a "penny stock," among other potentially detrimental consequences, and could severely limit the liquidity of our common stock and materially adversely affect the price of our common stock. Any of these outcomes could significantly impact our stockholders' ability to sell their shares of our common stock or to sell these shares at a price that a stockholder may deem acceptable.

Future issuances of our common stock or rights to purchase our common stock, including pursuant to our equity incentive plans, could result in additional dilution to the percentage ownership of our stockholders and could cause the price of our common stock to decline.

We have historically funded our operations in large part with proceeds from equity and convertible debt financings, and we expect to continue to do so in the future. In addition to capital-raising purposes, we may also issue securities from time to time at prices and on other terms as we determine for acquiring other businesses or assets in exchange for shares of our common stock or other securities, issuing securities to collaborators in connection with strategic partnerships, attracting and retaining employees with equity compensation, or other purposes. If we sell common stock or other equity or convertible debt securities in the future, our then-existing stockholders could be materially diluted by such issuances and new investors could gain rights, preferences and privileges senior to the holders of our common stock, which could cause the price of our common stock to decline.

Sales of our common stock, or the perception that such sales could occur, could cause the market price of our stock to drop significantly, regardless of the state of our business.

As of December 30, 2017, there were 79,313,868 shares of our common stock outstanding, 8,745,170 shares of our common stock subject to outstanding stock options, 4,924,124 of our common stock subject to outstanding warrants, and 12,507,615 shares of our common stock subject to outstanding convertible notes. All outstanding shares of our common stock are eligible for sale in the public market under applicable federal securities laws, subject in certain

cases to the requirements of Rule 144 under the Securities Act of 1933, as amended, and shares issued upon the exercise or conversion of outstanding stock options, warrants or convertible notes may also be eligible for sale in the public market, to the extent permitted by Rule 144 or other applicable securities laws and the provisions of the applicable stock option, warrant and convertible note agreements. If these shares are sold, or if it is perceived that they may be sold, in the public market, the trading price of our common stock could fall.

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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 March 26, 2018, 5.9% of our outstanding common stock was held by our directors and officers, including 5.7% held by Chun K. Hong, our President, 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, any proposed merger, consolidation or sale of all or substantially all of our assets and other significant 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, as well as our rights agreement, could delay or prevent a change of control and could also limit the market price of our common 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, including:

- our board of directors is authorized, without prior stockholder approval, to designate and issue preferred stock, commonly referred to as “blank check” preferred stock, which may have 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. Further, in April 2017, we adopted a rights agreement that would, under certain specified circumstances and for so long as the rights issued under the rights agreement are outstanding, give the holders of our common stock the right to acquire additional shares of our capital stock, which would make it more difficult for a third party to acquire a significant percentage of our outstanding capital stock or attempt a hostile takeover of our Company.

These and other provisions in our certificate of incorporation and bylaws and of Delaware law, as well as the existence of our rights agreement, 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 our board of directors, including a merger, tender offer, proxy contest or other change of control transaction involving our Company. Any delay or prevention of a change of control transaction 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 our common stock. In addition, these anti-takeover provisions could reduce the price that investors are willing to pay for shares of our common stock.

We do not currently intend to pay dividends on our common stock, and any return to investors is expected to result, 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 all decisions about dividends are at the discretion of our board of directors, we have never declared or paid cash dividends on our capital stock in the past, and we have no intention of declaring or paying any such dividends in the foreseeable future. As a result, any return to investors is expected to result, if at all, only from potential increases in the price of our common stock.

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Item 1B. Unresolved Staff Comments.

Not applicable.

Item 2. Properties

Our corporate headquarters is located in approximately 8,200 square feet of space in Irvine, California, under a lease that expires in July 2018. We also currently lease approximately 42,200 square feet of space for our manufacturing facility in the PRC under a lease that expires in June 2019.

We believe our current facilities are adequate for our current and expected operations for the next 12 months and that additional space could be obtained if needed.

Item 3. Legal Proceedings

The information under “Litigation and Patent Reexaminations” in Note 7 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

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Our common stock began trading under the trading symbol “NLST” on the Nasdaq Global Market on November 30, 2006. As of January 14, 2016, our common stock commenced trading on the Nasdaq Capital Market under the same trading symbol. The following table sets forth the high and low sales prices for our common stock as reported on the Nasdaq Global Market or the Nasdaq Capital Market tier, as applicable, for the periods indicated:

	High	Low
Year Ended December 30, 2017		
Fourth Quarter	\$ 0.75	\$ 0.25
Third Quarter	1.35	0.55
Second Quarter	1.40	0.92
First Quarter	1.17	0.83
Year Ended December 31, 2016		
Fourth Quarter	\$ 1.31	\$ 0.93
Third Quarter	1.83	1.13
Second Quarter	1.49	0.94
First Quarter	1.75	0.60

Holdings

As of March 26, 2018 there were approximately 9 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.

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Dividend Policy

We have never declared or paid cash dividends on our capital stock in the past, and we have no intention of declaring or paying any such dividends in the foreseeable future. Additionally, our credit facility with SVB prohibits the payment of cash dividends without obtaining SVB's prior consent. Any declaration or payment of dividends in the future will be at the discretion of our board of directors, and will depend on our results of operations, 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

Unless the context indicates otherwise, all references to "Netlist," our "Company," "we," "us," or "our" in this discussion and analysis refer to Netlist, Inc., together with its consolidated subsidiaries. This discussion and analysis should be read in conjunction with our audited consolidated financial statements and the related notes included in Part II, Item 8 of this report, and all cross-references to notes in this discussion and analysis refer to the identified note contained in such consolidated financial statements.

Forward-Looking Statements

This discussion and analysis includes "forward looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements other than historical facts and often address future events or our future performance. Words such as "anticipate," "estimate," "expect," "project," "intend," "may," "will," "might," "plan," "predict," "believe," "should," "could" and similar words or expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements contained in this discussion and analysis include statements about, among other things: our beliefs regarding the market and demand for our products or the component products we resell; our ability to develop and launch new products that are attractive to the market and stimulate customer demand for these products; our plans relating to our intellectual property, including our goals of monetizing, licensing, expanding and defending our patent portfolio; our expectations and strategies regarding outstanding legal proceedings and patent reexaminations relating to our intellectual property portfolio, including our pending proceedings against SK hynix Inc., a South Korean memory semiconductor supplier ("SK hynix"); our expectations with respect to any strategic partnerships or other similar relationships we may pursue; our business strategies and objectives; and our expectations regarding our future operations and financial position, including revenues, costs and prospects, and our liquidity and capital resources, including cash flows, sufficiency of cash resources, efforts to reduce expenses and the potential for future financings. All forward-looking statements reflect management's present assumptions, expectations and beliefs regarding future events and are subject to known and unknown risks, uncertainties and other factors that could cause actual results to differ materially from those expressed in or implied by any forward-looking statements. These risks and uncertainties include those described in Item 1A. Risk Factors of this report. In addition, we operate in a competitive and rapidly evolving industry in which new risks emerge from time to time, and it is not possible for us to predict all of the risks we may face, nor can we assess the impact of all factors on our business or the extent to which any factor or combination of factors could cause actual results to differ from our expectations. In light of these risks, uncertainties and other factors, our forward-looking statements should not be relied on as predictions of future events. All forward-looking statements reflect our assumptions, expectations and beliefs only as of the date they are made, and except as required by law, we undertake no obligation to revise or update any forward-looking statements for any reason.

Overview

We provide high-performance modular memory subsystems to customers in diverse industries that require enterprise and storage class memory solutions to empower critical business decisions. We have a history of introducing disruptive new products, such as one of the first load reduced dual in-line memory modules ("LRDIMM") based on our distributed buffer architecture, which has been adopted by the industry for DDR4 LRDIMM. We were also one of the first to bring NAND flash memory ("NAND flash") to the memory channel with our NVvault non-volatile dual in-line memory modules ("NVDIMM") using software-intensive controllers and merging dynamic random access memory integrated circuits ("DRAM ICs" or "DRAM") and NAND flash to solve data bottleneck and data retention challenges encountered in high-performance computing environments. We recently introduced a new generation of storage class memory products called HybriDIMM to address the growing need for real-time analytics in Big Data applications, in-memory databases, high performance computing and advanced data storage solutions. We publicly demonstrated a HybriDIMM prototype in August 2016 and we sampled HybriDIMM to select customers in the second half of 2017, and we are now working with certain customers to transition to volume production. We also resell NAND flash, DRAM products and other component products to end-customers that are not reached in the distribution models of the component manufacturers, including storage customers, appliance customers, system builders and cloud and datacenter customers.

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Due to the ground-breaking product development of our engineering teams, we have built a robust portfolio of over 100 issued and pending U.S. and foreign patents, many seminal, in the areas of hybrid memory, storage class memory, rank multiplication and load reduction. Since our inception, we have dedicated substantial resources to the development, protection and enforcement of technology innovations we believe are essential to our business. Our early pioneering work in these areas has been broadly adopted in industry-standard registered dual in-line memory modules (“RDIMM”), LRDIMM and in NVDIMM. Our objective is to continue to innovate in our field and invest further in our intellectual property portfolio, with the goal of monetizing our intellectual property through a combination of product sales and licensing, royalty or other revenue-producing arrangements, which may result from joint development or similar partnerships or defense of our patents through enforcement actions against parties we believe are infringing them.

We recorded total net revenues of \$38.3 million and \$19.7 million, gross profit of \$2.5 million and \$7.4 million, and net losses of \$13.4 million and \$11.2 million, in each case for the years ended December 30, 2017 and December 31, 2016, respectively. We have historically financed our operations primarily with proceeds from issuances of equity and debt securities and revenues generated from operations, including from product sales and a non-recurring engineering (“NRE”) fee from our November 2015 joint development and license agreement (“JDLA”) with Samsung Electronics Co., Ltd (“Samsung”). We have also funded our operations with a revolving line of credit and term loans under a bank credit facility, a funding arrangement for costs associated with certain of our legal proceedings against SK hynix and, to a lesser extent, equipment leasing arrangements. See “Liquidity and Capital Resources” below for more information.

2017-2018 Developments

Developments relating to SK Hynix Proceedings

Final Determination in First ITC Action

We have taken action to protect and defend our innovations by filing legal proceedings for patent infringement against SK hynix and two of its subsidiaries in the U.S. International Trade Commission (“ITC”), U.S. district court and the courts of Germany and the People’s Republic of China (“PRC”). In our two separate ITC actions against SK hynix, we have requested exclusion orders that direct U.S. Customs and Border Protection to stop allegedly infringing SK hynix RDIMM and LRDIMM products from entering the United States. In our U.S. district court and international court proceedings, we are primarily seeking damages. All of our patents involved in these proceedings cover key features of RDIMM and LRDIMM products.

On January 16, 2018, the ITC issued a final determination regarding our first ITC action against SK hynix filed in September 2016, in which it concluded there was no infringement of the patents in this action and terminated the ITC’s investigation related to these proceedings. Standard procedures at the ITC afford us the opportunity to appeal the ITC’s

final determination, and we are currently considering our options regarding any such appeal. Our second ITC action against SK hynix, which we filed in October 2017 and which is based on alleged infringement of different patents, as well as our district and international court proceedings, are unaffected by this determination and remain ongoing. Based on target dates set by the ITC, our second ITC action is currently scheduled for an evidentiary hearing in November 2018 and a final initial determination in March 2019 if the action continues through these dates; however, as with all legal proceedings, the timing and outcomes of the ITC action are inherently uncertain and subject to change.

TRGP Agreement

On May 3, 2017, we entered into an investment agreement (the “TRGP Agreement”) with TR Global Funding V, LLC, an affiliate of TRGP Capital Management, LLC (“TRGP”), which generally provides that TRGP will directly fund the costs incurred by us or on our behalf in connection with certain of our proceedings against SK hynix, including costs incurred since January 1, 2017 and costs to be incurred in the future in our first ITC action and our U.S. district court proceedings, but excluding our subsequent ITC action and our proceedings in international courts. In exchange for such funding, we have agreed that, if we recover any proceeds in connection with the funded SK hynix proceedings, we will pay to TRGP the amount of its funding plus an escalating premium based on when any such proceeds are recovered, such that the premium will equal a specified low-to-mid double-digit percentage of the amount of TRGP’s funding and such percentage will increase by a specified low double-digit amount each quarter after a specified date until any such

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proceeds are recovered. In addition, we have granted to TRGP a first priority security interest in the claims underlying the funded SK hynix proceedings and any proceeds we may receive in connection with these proceedings, and a second priority security interest in our patents that are the subject of these proceedings. We have established this funding arrangement in order to provide us with increased security that we will be able to vigorously pursue our claims against SK hynix through their final resolution.

Rights Agreement

On April 17, 2017, we adopted a rights agreement to implement a standard “poison pill.” In general terms, for so long as the rights issued under the rights agreement are outstanding, the rights agreement prevents any person or group from acquiring a significant percentage of our outstanding capital stock or attempting a hostile takeover of our Company by significantly diluting the ownership percentage of such person or group. As a result, the rights agreement has a significant anti-takeover effect. Our board of directors approved the rights agreement as part of our strategy in connection with our proceedings against SK hynix, with the intent of disconnecting our market capitalization from the damages calculations and any settlement negotiations that may develop in connection with these proceedings.

2017 Offering

On August 22, 2017, we completed an underwritten public offering (the “2017 Offering”), pursuant to which we sold 8,500,000 shares of our common stock at a price to the public of \$0.60 per share. The net proceeds to us from the 2017 Offering were \$4.4 million, after deducting underwriting discounts and commissions and offering expenses paid by us.

ATM Program

On November 14, 2017, we entered into an At Market Issuance Sales Agreement (the “Sales Agreement”) with B. Riley FBR, Inc. (the “Agent”) to sell shares of our common stock, with aggregate gross proceeds of up to \$9.0 million, from time to time, through an “at-the-market” equity offering program under which the Agent will act as sales agent (the “ATM Program”). Under the Sales Agreement, we will set the parameters for the sale of shares, including the number of shares to be issued, the time period during which sales are requested to be made, any limitation on the number of shares that may be sold in any one trading day and any minimum price below which sales may not be made. The Sales Agreement provides that the Agent will be entitled to compensation for its services in an amount equal to 3.0% of the gross proceeds from the sale of shares under the Sales Agreement. We have no obligation to sell any shares under the Sales Agreement and may suspend solicitation and offers under the Sales Agreement at any time. We sold 8,894,222 shares of stock for net proceeds of \$2.8 million as of December 30, 2017 and subsequent to our year end through March 26, 2018 we sold 6,101,312 shares of stock for approximate net proceeds of \$1.8 million.

Amendments to SVB Credit Agreement

On March 20, 2018, March 27, 2017 and April 12, 2017, we entered into amendments to our credit agreement (as amended, the “SVB Credit Agreement”) with Silicon Valley Bank (“SVB”). The amendments extend the maturity date of advances under the SVB Credit Agreement to March 31, 2019; modify our financial covenants under the SVB Credit Agreement to remove all prior financial standards and replace them with a liquidity ratio standard; remove or amend certain termination, anniversary and unused facility fees payable by us under the SVB Credit Agreement; and make certain other administrative changes.

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 Revenues

Net product revenues consist of resales of certain component products, including NAND flash and DRAM products, and 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. Product sales are made primarily pursuant to stand-alone purchase orders, which generally have no cancellation or rescheduling penalty provisions. Our customers typically provide us with non-binding forecasts of future product demand over specific periods of time, but they generally place orders with us no more than two weeks in advance of the desired delivery date. Selling prices are typically negotiated monthly, based on competitive market conditions and the then-current price of relevant component products, including DRAM ICs and NAND flash. We often ship products to our customers' international manufacturing sites, but all of our sales to date have been denominated in U.S. dollars.

The component products we resell include products we purchase for the purpose of resale, as well as excess component inventory we purchase for, but do not use in, our memory subsystems. Resales of these products have increased over the past several years, and we expect this trend may continue. We also resell excess component inventory to distributors and other users of memory integrated circuits, but these sales have historically been, and we expect will continue to be, a relatively small percentage of our net product revenues.

We also sell our memory subsystem products, primarily to original equipment manufacturers ("OEMs"). Sales of our memory subsystem products have declined in recent periods, and we expect these declines could continue unless and until our next-generation products gain significantly greater customer and market acceptance.

Engineering Services

Pursuant to the terms of our JDLA with Samsung, we provided certain engineering services for Samsung and received a NRE fee as compensation for these services. These fees from Samsung are the only such fees for engineering services we have received to date, but we could in the future receive additional fees of this type, from Samsung or other parties, depending on the terms of the relationships we may develop.

Cost of Sales and Gross Margin

Our cost of sales includes the cost of materials (including component products), labor and other manufacturing costs, depreciation and amortization of equipment expenses, inventory valuation provisions, stock-based compensation expenses, occupancy costs and other allocated fixed costs.

For resales of component products, including NAND flash and DRAM products, cost of sales includes the cost of the products we purchase for resale. We purchase these products from Samsung under the terms of the JDLA and from other suppliers on the terms we negotiate with these suppliers. For sales of our memory subsystem products, cost of sales also includes the DRAM ICs and NAND flash we purchase and incorporate into these products. As a result, the

DRAM ICs and NAND flash we purchase for resale or for use in our products constitute a significant portion of our cost of sales in any period. Our cost of sales fluctuates between periods based on the cost to us to purchase DRAM ICs and NAND flash. We attempt to pass through these DRAM IC and NAND flash cost fluctuations to our customers, but any inability to do so negatively impacts our gross margin.

Research and Development

Research and development expenses consist primarily of employee and independent contractor compensation and related costs, stock based compensation expenses, NRE fees that we pay to third parties, computer aided design software license costs, reference design development costs, depreciation or rental of evaluation equipment expenses, and occupancy and other allocated overhead costs. Also included in research and development expenses are the costs of materials 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

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are expensed as incurred. We have been spending less on research and development but we continue to anticipate spending more for HybriDIMM.

Intellectual Property Legal Fees

Intellectual property legal fees consist of legal fees incurred for patent filings, protection and enforcement. Intellectual property legal fees are generally expensed as incurred. Although we expect intellectual property legal fees to generally increase over time as we continue to protect, defend and enforce and seek to expand our patent portfolio, these increases may not be linear but may occur in lump sums depending on the due dates of patent filings and their associated fees and the arrangements we may make with our legal advisors in connection with enforcement proceedings, which may include contingent fee arrangements in which we would pay these legal advisors on a scaled percentage of any negotiated fees, settlements or judgments awarded to us based on if, how and when the fees, settlements or judgments are obtained.

We expect our intellectual property legal fees may show different trends for so long as the TRGP Agreement remains in effect. Pursuant to the terms of the TRGP Agreement, the legal expenses we incur that are paid directly by TRGP are excluded in their entirety from our financial statements in each period in which the agreement remains in effect. In addition, any settlement or other cash proceeds we may recover in the future in connection with the SK hynix proceedings funded by TRGP would be reduced by the aggregate amount of legal expenses we exclude as a result of TRGP's payment of these expenses, plus the premium amount due to TRGP under the terms of the TRGP Agreement at the time of any such recovery. As a result, we expect our intellectual property legal fees could decrease or increase at a slower rate if and to the extent these fees are funded by TRGP, which would be the case if the TRGP Agreement remains in effect, the proceedings covered by the TRGP Agreement remain ongoing and our focus is directed to such proceedings (rather than other existing or potential future intellectual property legal proceedings). Additionally, we expect our intellectual property legal fees would be significantly higher in the period in which a recovery from the SK hynix proceedings covered by the TRGP Agreement, if any, occurs. In light of the final determination in our first ITC action and the current stay of our U.S. district court proceedings, which are the main SK hynix proceedings presently covered by the TRGP Agreement, as well as our current focus on our second ITC action against SK hynix, which is not presently covered by the TRGP Agreement, the impact of the TRGP Agreement on our intellectual property legal fees may not be as significant in near-term future periods as it was in 2017.

Selling, General and Administrative

Selling, general and administrative expenses primarily consist of employee compensation and related costs, stock-based compensation expenses, independent sales representative commissions, professional service fees, promotional and other selling and marketing expenses, and occupancy and other allocated overhead costs. Selling expenses also includes the cost of materials and overhead related to products manufactured for customer qualifications, since working through the product approval and qualification process with OEMs and other potential customers of our memory subsystem products can comprise a significant portion of our selling effort for these products. Selling, general and administrative expenses are generally expensed as incurred.

Provision for Income Taxes

Our net deferred tax assets consist primarily of net operating loss carryforwards. Because we provide a full valuation allowance against net deferred tax assets, our effective tax rate differs from the federal statutory rate and we do not recognize an income tax benefit related to losses incurred.

Factors Affecting Our Performance

Trends in Product Sales

We are and in the past have been substantially dependent on sales of single products or product categories. For instance, we have historically been dependent on sales of our memory subsystem products, including particularly our NVvault NVDIMM, and in recent periods, we have been dependent on our resales of component products. Demand for

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any of these products could increase or decrease at any time for a number of reasons, including new customer qualifications, changing customer requirements or preferences, product obsolescence, introduction of more advanced or otherwise superior products by us or our competitors, the ability of our customers to obtain these products or substitute products from alternate sources, customers increasing or reducing their need for these products generally, or a variety of other factors. We have no long-term agreements or other commitments with respect to sales of any of these products. As a result, any fluctuations in demand for these products from us would impact our sale levels and net product revenues.

For example, we have experienced a sharp decline in demand for and sales of NVvault. This rapid decline has been due in large part to the loss of our former most significant NVvault customer, Dell, beginning in 2012. We have recognized no NVvault sales to Dell in the past several years, and we expect no future demand from Dell for these products. We have also experienced declines in demand for and sales of our other memory subsystem products in recent periods, and these declines could continue or intensify in the future.

Contrastingly, we have experienced marked increases in component product resales in recent years. Because the cost of the component products we purchase for resale is added to our cost of sales for these products, our gross margin on resales of component products is significantly lower than our gross margin on sales of our memory subsystem products. As a result, increases or decreases in component product resales as a percentage of our total product revenues have a significant impact on our gross margins.

We believe our ability to record revenues and gross profits at levels sufficient to replace lost NVvault sales will depend on our ability to grow demand for and sales of our memory subsystem products, by securing new NVvault customers or successfully commercializing NVvault product extensions and other next-generation products. Although we continue to pursue qualifications of NVvault with OEMs and potential new customer applications, we have had limited success with these efforts to date and may not be successful in the future. In addition, although we have introduced NVvault product extensions and other next-generation products, including most recently our HybriDIMM memory subsystem, the rate and degree of customer adoption of these products has been slower and smaller than expected and these trends could continue. Further, HybriDIMM and some of our other next-generation products are still under development and may require additional time and capital investments in order to commercialize, and our development and commercialization strategies for these products, including, for instance, our JDLA with Samsung relating to the joint development of new storage class memory technologies to facilitate broad industry adoption of this new technology, may not be successful. Our ability to obtain customer or market acceptance of these next-generation products will materially impact our net product revenues and gross profits, as well as our ability to recoup our investments in developing these products.

Customer Composition and Concentrations

Our target markets are characterized by a limited number of large companies, and consolidation in one or more of these target markets may further increase this concentration. As a result, sales to small numbers of customers have

historically represented a substantial portion of our net product revenues, and we expect this concentration to continue. Additionally, the composition of major customers and their respective contributions to our net product revenues have fluctuated and will likely continue to fluctuate from period to period as our existing and prospective customers progress through the life cycle of the products they produce and sell and experience resulting fluctuations in their product demand. We believe our performance depends in significant part on our ability to establish and maintain relationships with and effect substantial sales to our large customers. We do not have long-term agreements with any of our customers and, as result, any or all of them could decide at any time to increase, accelerate, decrease, delay or discontinue their purchase of our products or the component products we resell. These fluctuations in customer demand and concentrations could significantly impact our net product revenues.

Product Sale Prices

The prices customers pay for the products we sell can fluctuate due to many factors, including, among others, competitive conditions in our key customer markets, changes in customer requirements or preferences, volatility in the market prices for DRAM ICs, NAND flash and other component products, and changes in manufacturing efficiencies or capacities. Our industry has historically been characterized by declines in average sale prices. If sale price declines are

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not offset by corresponding decreases in costs or increases in sales volume or sales of products with higher margins, these sale price declines could have a material adverse effect on our operating results.

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. As a result, if market prices for essential components increase, we generally cannot pass the price increases through to our customers for products purchased under an existing purchase order. Consequently, we are exposed to the risks associated with the volatility of prices for these components and our cost of sales could increase and our gross margins could decrease in the event of sudden price increases. Alternatively, if there are declines in the prices of these components, we may be required to reduce our selling prices for subsequent purchase orders, which may result in a decline in our net product revenues.

In addition, because a large percentage of our product revenues are often from sales to a small number of customers, these customers may exert pressure on us to make concessions in the prices at which we sell products to them. These sale price concessions could have a material effect our net product revenues.

Component Product Supply

Our ability to fulfill customer orders for our memory subsystem products or the component products we resell is dependent on a sufficient supply of DRAM ICs, NAND flash and other component products. We have no long-term supply contracts for any of these component products. There are a relatively small number of suppliers of these components, and we typically purchase from only a subset of these suppliers.

From time to time, shortages in DRAM ICs and NAND flash have required some suppliers to limit the supply of these components. In the past, we have experienced supply chain disruptions and shortages of DRAM and NAND flash required to create certain of our memory subsystem products, and we have been forced to procure the component products we resell from other suppliers to the extent sufficient product is not available from Samsung to meet customer demand or in the event of other Samsung supply issues. Supply shortages can occur at any time and for a variety of reasons, including, among others, spikes in customer demand that cannot be satisfied by our suppliers, any problems that arise with the supplier's manufacturing operations or facilities that cause disruptions or delays, or any failure by the supplier to comply with the terms of its supply arrangements with us. If we are not able to obtain components in the amounts needed, on a timely basis and at commercially reasonable prices, we may lose customers due to order delivery interruptions or failures, which could impact our net product revenues, and we may experience increases in our cost of sales if we are forced to procure components from alternative suppliers and are not able to negotiate favorable terms with these suppliers. For example, with respect to Samsung, any inability to obtain sufficient component products from Samsung could increase our cost of sales for component product resales because we may not be able to make arrangements with other suppliers on financial and other terms comparable to those we have negotiated with Samsung under the JDLA. As described above, we may or may not be able to pass any such cost increases through to our customers, in which case they could materially adversely impact our results by increasing our cost of sales without a corresponding increase in our net product revenues.

Product Demand Forecasting

Because of the short-term nature of the commitments by many of our customers and the short turnaround times that apply to most orders, as well as our customers' ability to cancel or defer purchase orders for any reason, we are required to make component procurement decisions based on forecasts of customer demand for the products we sell.

Our production expense and component purchase levels are to a large extent fixed in the short term. As a result, we may 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 component or finished goods inventory, which may not be able to be used in other products or resold and may become obsolete before any such use or resale. If there is a subsequent decline in the prices of components, the value of our inventory would fall and we may be required to write-down the value of our component inventory, which may result in a significant increase in our cost of sales and decrease in our gross margins. In the past, we have had to write-down inventory due to obsolescence, excess quantities and declines in

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market value below our costs. As a result, any significant shortfall of customer orders in relation to our expectations could hurt our operating results, cash flows and financial condition.

Conversely, any rapid increases in demand by our customers could strain our resources. If we underestimate customer demand, we may not have sufficient inventory of necessary components on hand to meet that demand and we may need to try to procure additional quantities, which may not be available or may only be available at high prices or on otherwise unfavorable terms. We also may not have sufficient manufacturing capacity at any given time to meet any demands for rapid increases in production of our memory subsystem products. Any shortages of inventory or manufacturing capacity could lead to delays in the delivery of products, which may reduce our net product revenues.

In addition, if our product demand forecasts are wrong, we may understate or overstate the provision required for excess and obsolete inventory. 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 the determination. Conversely, 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 the inventories are sold.

Intellectual Property Protection, Enforcement and Monetization

We dedicate substantial resources to developing technology innovations we believe are essential to our business. We intend to pursue monetization avenues for our intellectual property portfolio, potentially including licensing, royalty or other revenue-producing arrangements. However, we have not generated any such revenue stream from our intellectual property to date. If we are not successful in monetizing our intellectual property portfolio, we may never recoup our investments of time, capital and other resources in the development, maintenance, defense and enforcement of this portfolio, which could materially adversely affect our results of operations.

We also dedicate substantial resources to protecting and enforcing our intellectual property rights, including with patent infringement proceedings we file against third parties and defense of our patents against challenges made by way of reexamination and review proceedings at relevant government agencies. We expect these activities to continue for the foreseeable future, with no guarantee that any ongoing or future patent protection or litigation activities will be successful. We are also subject to litigation based on claims that we have infringed the intellectual property rights of others. Any litigation, regardless of its outcome, is inherently uncertain, involves a significant dedication of resources, including time and capital, and diverts management's attention from our other activities. As a result, any current or future infringement claims or patent challenges by or against third parties, whether or not eventually decided in our favor or settled, could materially adversely affect our business, financial condition and results of operations. Additionally, the outcome of pending or future litigation and related patent reviews and reexaminations, as well as any delay in their resolution, could affect our ability to continue to sell our products, protect against competition in the current and expected markets for our products or license or otherwise monetize our intellectual property rights in the future.

Impact of Certain Recent Accounting Pronouncements

In July 2015, the FASB issued Accounting Standards Update (“ASU”) No. 2015-11, Simplifying the Measurement of Inventory (“ASU 2015-11”), which requires entities to measure inventory at the lower of cost or net realizable value. Current guidance requires inventory to be measured at the lower of cost or market, with market defined as replacement cost, net realizable value, or net realizable value less a normal profit margin. This ASU simplifies the subsequent measurement of inventory by replacing the lower of cost or market test with a lower of cost or net realizable value test. We adopted this guidance in the first quarter of 2017 and there was no material impact on our consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, Compensation-Stock Compensation (Topic 718) Improvements to Employee Share-Based Payment Accounting (“ASU 2016-09”), which is intended to simplify several aspects of the accounting for share-based payment transactions, including the accounting for income taxes, forfeitures, statutory tax withholding requirements, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 is effective for fiscal years beginning after December 15, 2016, including interim periods. We adopted this guidance in the first quarter of 2017 and elected to continue to estimate forfeitures expected to

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occur to determine the amount of compensation cost to be recognized in each period. As a result, there was no material impact on its consolidated financial statements.

Business Risks and Uncertainties

Our business, financial condition and prospects are exposed to a number of risks and uncertainties. See the discussion in Item 1A. Risk Factors of this report for more information.

Critical Accounting Policies

The preparation of our consolidated financial statements in conformity with accounting principles generally accepted in the United States requires management 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 revenues 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 and assumptions 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 and assumptions on an ongoing basis. Actual results may differ from our estimates, which may result in material adverse effects on our consolidated 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

We generate revenue from sales of products and performance of engineering services.

Net Product Revenues

Net product revenues consist primarily of resales of NAND flash, DRAM products and other component products to end-customers that are not reached in the distribution models of the component manufacturers, including storage

customers, appliance customers, system builders and cloud and datacenter customers, as well as sales of high-performance modular memory subsystems primarily to original equipment manufacturers (“OEMs”) in the server, high-performance computing and communications markets.

We recognize revenues in accordance with Financial Accounting Standards Board (“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 customers of its memory subsystem products 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 product revenues, while all costs incurred by us for shipping and handling are classified as cost of sales.

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Engineering Services

From time-to-time, 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 it would be able to collect the amount due from the customer. To the extent one or more of these conditions has not been satisfied, we defer recognition of revenue.

Deferred Revenue

From time-to-time, we receive pre-payments from our customers related to future services. Engineering development fee revenues, including NRE fees, are deferred and recognized ratably over the period the engineering work is completed.

Fair Value of Financial Instruments

We follow ASC Topic 820 to account for the fair value of certain assets and liabilities. ASC Topic 820 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. ASC Topic 820 emphasizes that fair value is a market-based measurement, not an entity-specific measurement. Therefore, a fair value measurement should be determined based on the assumptions that market participants would use in pricing the asset or liability. As a basis for considering market participant assumptions in fair value measurements, ASC Topic 820 establishes a fair value hierarchy that distinguishes between market participant assumptions based on market data obtained from sources independent of the reporting entity (observable inputs that are classified within Levels 1 and 2 of the hierarchy) and the reporting entity's own assumptions about market participant assumptions (unobservable inputs classified within Level 3 of the hierarchy).

Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that we have the ability to access. An active market is defined as a market in which transactions for the assets or liabilities occur with sufficient frequency and volume to provide pricing information on an ongoing basis. Level 2 inputs are inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. Level 2 inputs may include quoted prices for similar assets and liabilities in active markets, as well as inputs that are observable for the asset or liability (other than quoted prices), such as interest rates, foreign exchange rates and yield curves that are observable at commonly quoted intervals. Level 3 inputs are unobservable inputs for the asset or liability, which are typically based on our own assumptions, as there is little, if any, related market activity. In instances where the determination of the fair value measurement is based on inputs from different levels of the fair value hierarchy, the level in the fair value hierarchy within which the entire fair value measurement falls is based on

the lowest level input that is significant to the fair value measurement in its entirety. Our assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and considers factors specific to the asset or liability.

Our financial instruments consist principally of cash and cash equivalents, restricted cash, accounts receivable, accounts payable, accrued expenses, revolving line of credit and convertible promissory note. We consider the carrying values of cash and cash equivalents, restricted cash, accounts receivable, accounts payable and accrued liabilities to approximate the fair value for these financial instruments based upon an evaluation of the underlying characteristics, market data and because of the short period of time between origination of the instruments and their expected realization. The fair value of our revolving line of credit and convertible promissory note are determined using current applicable rates for similar instruments as of the balance sheet date and an assessment of our credit rating. The carrying value of our revolving line of credit at December 30, 2017 approximates fair value because our interest rate yield is near current market rates for comparable debt instruments. The fair value of our convertible promissory note was estimated using a discounted cash flow analysis using borrowing rates available to us for debt instruments with similar terms and maturities. We have determined that the valuation of our convertible promissory note is classified in Level 2 of the fair value hierarchy. The carrying value and estimated fair value of the convertible promissory note as of December 30, 2017 were \$14.1 million and \$12.3 million, respectively. The carrying value and estimated fair value of the convertible promissory note as of December 31, 2016 were \$13.9 million and \$12.2 million, respectively.

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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 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 expectations and the provisions established. However, we cannot guarantee that we will continue to experience credit loss rates similar to those experienced in the past.

Our accounts receivable are generally 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, liquidity and future operating results.

Inventories

Inventories are valued at the lower of 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. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. At each balance sheet date, we evaluate our ending inventory quantities on hand and on order and record a provision for excess quantities and obsolescence. Among other factors, we consider historical demand and forecasted demand in relation to 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 components in determining the net realizable value of our inventory. Once established, lower of cost or net realizable value write-downs are considered permanent adjustments to the cost basis of the excess or obsolete inventories.

Impairment of Long-Lived Assets

We evaluate the recoverability of the carrying value of long-lived assets held and used by us 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 sale 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. Our management believes there is no impairment of long-lived assets as of December 30, 2017. However, market conditions could change or demand for the products we sell could decrease, which could result in future impairment of long-lived assets.

Debt Issuance 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 our 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 warrants issued in conjunction with the debt and are also 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.

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Warranty Liability

We offer product warranties generally ranging from one to three years, depending on the product and negotiated terms of any 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 component products. We record an estimate for warranty-related costs at the time of sale based on our historical and estimated future product return rates and expected repair or replacement costs. While such costs have historically been within management's expectations and the provisions established, unexpected changes in failure rates could have a material adverse impact on us, requiring additional warranty reserves, and could adversely affect our gross profit and gross margins.

Stock-Based Compensation

We account for equity issuances to non-employees in accordance with FASB 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 estimated 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 FASB 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 during the period. Given that stock-based compensation expense recognized in our consolidated statements of operations is based on awards ultimately expected to vest, it has been reduced for estimated forfeitures. We estimate our forfeitures at the time of grant and revise such estimates, 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 estimated 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 weighted-average of the vesting period and the contractual expiration date of the option. This calculation is in accordance with FASB ASC Topic 718, as amended by certain Securities and Exchange Commission guidance providing for a safe harbor method 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 dividend assumption is based on our history and management's expectation regarding dividend payouts.

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.

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 we grant additional stock options or other stock-based awards.

Income Taxes

Deferred tax assets and liabilities are recognized to reflect the estimated future tax effects, calculated at currently effective tax rates, of future deductible or taxable amounts attributable to events that have been recognized on a cumulative basis in our consolidated financial statements. A valuation allowance related to a net deferred tax asset is

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recorded when it is more likely than not that some portion of the deferred tax asset will not be realized. Deferred tax liabilities, deferred tax assets and valuation allowances are classified as non-current in our consolidated balance sheets.

FASB 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 FASB 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 may 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 require us to record additional tax liabilities or to reduce previously recorded tax liabilities, as applicable.

Interest Expense

Interest expense consists primarily of interest associated with our debt instruments, including fees related to the term loans, accretion of debt discounts 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

The table below presents each line item of our consolidated statements of operations as a percentage of total net revenues for the years ended December 30, 2017 and December 31, 2016. Historical results are not indicative of the results to be expected in the current period or any future period.

Year Ended	
December 30,	December 31,
2017	2016

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Net product revenues	100	%	65	%
NRE revenues	-		35	
Total net revenues	100		100	
Cost of sales	94		62	
Gross profit	6		38	
Operating expenses:				
Research and development	14		32	
Intellectual property legal fees	7		16	
Selling, general and administrative	19		46	
Total operating expenses	40		94	
Operating loss	(34)		(56)	
Other expense, net:				
Interest expense, net	(1)		(3)	
Other income, net	-		2	
Total other expense, net	(1)		(1)	
Loss before provision for income taxes	(35)		(57)	
Provision for income taxes	-		-	
Net loss	(35)	%	(57)	%

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Net Product Revenues, NRE Revenues, Cost of Sales and Gross Profit

The following table presents net product revenues, NRE revenues, cost of sales and gross profit for the years ended December 30, 2017 and December 31, 2016:

	Year Ended		Change	%	
	December 30, 2017	December 31, 2016		Change	Change
	(in thousands, except percentages)				
Net product revenues	\$ 38,322	\$ 12,798	\$ 25,524	199	%
NRE revenues	-	6,857	(6,857)	(100)	%
Total net revenues	38,322	19,655	18,667	95	%
Cost of sales	35,866	12,259	23,607	193	%
Gross profit	\$ 2,456	\$ 7,396	\$ (4,940)	(67)	%
Gross margin	6.4%	37.6%	(31.2)		%

Net Product Revenues

Our net product revenues are comprised of revenues from resales of component products and sales of our memory subsystem products. In 2017 and 2016, resales of component products represented 85% and 66% of our net product revenues, respectively.

The increase in our net product revenues for 2017 as compared to 2016 resulted primarily from increases of \$23.8 million in resales of component products, including primarily NAND flash and DRAM products, \$0.8 million in sales of our very low profile (VLP) memory subsystem products, \$0.4 million in sales of certain NVvault product extensions, and \$0.3 million in sales of other small outline dual in-line memory module (SODIMM) and RDIMM products.

Our largest customer in 2016, which accounted for 16% of net product revenues in 2016, made significantly fewer purchases and contributed a significantly smaller portion of our net product revenues in 2017. None of our customers accounted for greater than 10% of net product revenues in 2017.

NRE Revenues.

The decrease in NRE revenues for 2017 as compared to 2016 resulted from the recognition of revenues from the \$6.9 million NRE fee for engineering services performed under our JDLA with Samsung in the 2016 period due to our completion of the engineering services required under the initial phase of the agreement in 2016.

Cost of Sales, Gross Profit and Gross Margin.

The increase in our cost of sales in 2017 as compared to 2016 resulted primarily from increased costs associated with our increased net product revenues.

The decrease in our gross profit and our gross margin (or gross profit as a percentage of revenue) in 2017 as compared to 2016 resulted primarily from the decrease of NRE revenues, partially offset by increased margins on our net product revenues.

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Research and Development

The following table presents research and development expenses for the years ended December 30, 2017 and December 31, 2016:

	Year Ended			% Change
	December 30, 2017	December 31, 2016	Change	
	(in thousands, except percentages)			
Research and development	\$ 5,231	\$ 6,287	\$ (1,056)	(17) %

The decrease in research and development expenses for 2017 as compared to 2016 resulted primarily from decreases of \$0.3 million in product research expenses, \$0.7 million in headcount costs and related overhead and travel expenses and \$0.07 million in professional and outside service fees.

Intellectual Property Legal Fees

The following table presents intellectual property legal fees for the years ended December 30, 2017 and December 31, 2016:

	Year Ended			% Change
	December 30, 2017	December 31, 2016	Change	
	(in thousands, except percentages)			
Intellectual property legal fees	\$ 2,705	\$ 3,110	\$ (405)	(13) %

The decrease in intellectual property legal fees for 2017 as compared to 2016 resulted primarily from our establishment of the TRGP Agreement, pursuant to which we excluded \$10.2 million of legal expenses incurred in 2017 in connection with certain of our legal proceedings against SK hynix as a result of TRGP's payment of these expenses, as well as a decrease in 2017 in legal fees incurred for certain trade secret litigation, offset by increases in other legal fees incurred.

Selling, General and Administrative

The following table presents selling, general and administrative expenses for the years ended December 30, 2017 and December 31, 2016:

	Year Ended		Change	% Change	
	December 30, 2017	December 31, 2016			
	(in thousands, except percentages)				
Selling, general and administrative	\$ 7,374	\$ 9,033	\$ (1,659)	(18)	%

The decrease in selling, general and administrative expenses for 2017 as compared to 2016 resulted primarily from decreases of \$1.3 million in sales and marketing headcount costs and related overhead and travel expenses, \$0.2 million in management bonus payments, \$0.1 million in advertising and product evaluation costs, and \$0.1 million in fees for outside services, partially offset by an increase of \$0.1 million in bank fees related to the SVB Credit Agreement.

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Other Expense, Net

The following table presents other expense, net for the years ended December 30, 2017 and December 31, 2016:

	Year Ended		Change	% Change	
	December 30, 2017	December 31, 2016			
	(in thousands, except percentages)				
Interest expense, net	\$ (564)	\$ (578)	\$ 14	2	%
Other income, net	4	386	(382)	99	%
Total other expense, net	\$ (560)	\$ (192)	\$ (368)	(192)	%

Interest expense, net, for 2017 and 2016 consisted primarily of interest expense under the SVB Credit Agreement and a Senior Secured Convertible Note with an original principal amount of \$15.0 million ("SVIC Note") that we issued to an affiliate of Samsung Venture Investment Co. in November 2015 in connection with the JDLA (see Note 5 to our consolidated financial statements included elsewhere in this annual report), and the decrease between periods resulted primarily from lower amortization expense on the SVIC Note and a reduction of interest expense on the SVB Credit Agreement, due to lower unused credit line fees, offset by interest expense for the increase in net borrowings under the line of credit.

The decrease in other income, net, for 2017 as compared to 2016 resulted primarily from a reversal in 2016 of an engineering accrual expense for \$0.5 million for work that was not billed in 2016.

Income Tax Provision.

The following table presents the provision for income taxes for the years ended December 30, 2017 and December 31, 2016:

	Year Ended		Change	% Change	
	December 30, 2017	December 31, 2016			
	(in thousands, except percentages)				
Provision for income taxes	\$ 6	\$ 5	\$ 1	20	%

The federal statutory rate was 34% for 2017 and 2016. In both of these periods, we continued to provide a full valuation allowance against our net deferred tax assets, which consist primarily of net operating loss carryforwards. Our effective tax rate differed from the 34% statutory rate in all periods primarily due to the valuation allowance on newly generated loss carryforwards, and accordingly we did not recognize an income tax benefit related to losses incurred for the fiscal years ended December 30, 2017 and December 31, 2016.

On December 27, 2017, new U.S. federal tax legislation was enacted that, among other things, lowers the corporate tax rate from 35% to 21%. In addition to applying the new lower corporate tax rate in 2018 and thereafter to any taxable income we may record, the legislation affects the way we can use and carry forward net operating losses previously accumulated, and has resulted in a revaluation of our deferred tax assets and liabilities. Because our existing deferred tax assets are currently offset by a full valuation allowance, these tax law changes have had no net impact on our consolidated balance sheet as of December 30, 2017. However, if and when we become profitable, we would receive a reduced benefit from our deferred tax assets. As a result, the impact of the new tax law on us was a reduction in our deferred tax assets and corresponding valuation allowance of \$14.7 million. See Note 6 to our consolidated financial statements included elsewhere in this annual report for more information.

Liquidity and Capital Resources

Liquidity generally refers to the ability to generate adequate amounts of cash to meet our cash needs. We require cash to fund our operating expenses and working capital requirements, to make required payments of principal and interest under our outstanding debt instruments and, to a lesser extent, to fund capital expenditures.

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Working Capital

The following table presents working capital as of December 30, 2017 and December 31, 2016:

	December 30, December 31,	
	2017	2016
	(in thousands)	
Current assets(1)	\$ 16,925	\$ 19,253
Current liabilities	9,289	6,210
Working capital	\$ 7,636	\$ 13,043

(1) Includes cash and cash equivalents of \$6.7 million and \$9.5 million as of December 30, 2017 and December 31, 2016, respectively.

Our working capital decreased by \$5.4 million in 2017.

Our current assets decreased by \$2.3 million primarily from decreases of \$3.1 million in cash and cash equivalents and restricted cash attributable to our use of cash to fund our operations and \$1.5 million of prepaid and other current assets primarily attributable to a reclassification of other assets from current asset to long-term assets, partially offset by a increases of \$1.2 million in accounts receivable primarily attributable to increased net product revenues and \$0.9 million in inventory costs to support the increase in our net product revenues.

Our current liabilities increased by \$3.1 million primarily from increases of \$2.1 million in accounts payable attributable to inventory purchases to support the increase in our net product revenues and legal expenses to defend our intellectual property and \$1.3 million in our borrowings under the SVB Credit Agreement to fund our operations, partially offset by a decrease of \$0.3 million in accrued payroll and related liabilities attributable to a reduction in headcount.

Cash Provided by and Used in the Years Ended December 30, 2017 and December 31, 2016.

The following table summarizes our cash flows for the years ended December 30, 2017 and December 31, 2016:

	Year Ended	
	December 30, 2017	December 31, 2016
	(in thousands)	
Net cash provided by (used in):		
Operating activities	\$ (11,045)	\$ (20,794)
Investing activities	(94)	(346)
Financing activities	8,383	10,932
Net change in cash and cash equivalents	\$ (2,756)	\$ (10,208)

Operating Activities

Net cash used in operating activities for the year ended December 30, 2017 was primarily the result of a net loss of \$13.4 million and \$0.4 million in net cash used by changes in operating assets and liabilities, which were primarily from increases of \$0.9 million in inventories and \$1.3 million in accounts receivable partially offset by an increase of \$2.1 million in accounts payable and by \$2.0 million in net non-cash operating expenses, mainly comprised of depreciation and amortization, amortization of debt discount, accrued interest on outstanding debt and stock-based compensation. The increase in inventories between periods was primarily due to our purchase of additional inventory to support the increase in our net product revenues. The increase in accounts receivable between periods was primarily due

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to the increase in net product revenues. The increase in accounts payable between periods was primarily due to increased purchases of inventory.

Net cash used in operating activities for the year ended December 31, 2016 was primarily the result of a net loss of \$11.2 million and \$12.0 million in net cash used by changes in operating assets and liabilities, which were primarily from the recognition of \$6.9 million of deferred revenue in 2016 and increases of \$2.7 million in restricted cash, \$1.5 million in inventories and \$1.1 million in accounts receivable, partially offset by \$2.4 million in net non-cash operating expenses, mainly comprised of depreciation and amortization, amortization of debt discount, accrued interest on outstanding debt and stock-based compensation. The increase in restricted cash between periods was primarily to secure a portion of our line of credit with Samsung. The increase in inventories between periods was primarily due to our purchase of additional inventory to support the increase in our net product revenues. The increase in accounts receivable between periods was primarily due to the increase in net product revenues.

Investing Activities

Net cash used in investing activities for the years ended December 30, 2017 and December 31, 2016 was primarily the result of property and equipment purchases of \$0.09 million and \$0.3 million, respectively.

Financing Activities

Net cash provided by financing activities for the year ended December 30, 2017 was primarily the result of net proceeds of \$4.4 million from the 2017 Offering, net proceeds of \$2.8 million from the ATM Program, net proceeds of \$1.3 million from borrowings under our line of credit with SVB, and net proceeds of \$0.2 million from cash exercises of equity awards, partially offset by \$0.4 million in payments on debt.

Net cash provided by financing activities for the year ended December 31, 2016 was primarily the result of net proceeds of \$10.3 million from the 2016 Offering (as defined and discussed under “Capital Resources” below), net proceeds of \$0.7 million from borrowings under our line of credit with SVB, and net proceeds of \$0.2 million from cash exercises of equity awards, partially offset by \$0.3 million in payments on debt.

Capital Resources

Our sources of cash have historically consisted of proceeds from issuances of equity and debt securities and revenues generated from operations, including from product sales and the NRE fee from our JDLA with Samsung. We have also funded our operations with a revolving line of credit and term loans under a bank credit facility, a funding arrangement for costs associated with certain of our legal proceedings against SK hynix and, to a lesser extent, equipment leasing arrangements.

ATM Program

In November 2017, we entered into the Sales Agreement with the Agent to establish the ATM Program, pursuant to which we can offer and sell our common stock, from time to time, up to aggregate sales proceeds of \$9.0 million.

As of December 30, 2017, we had sold 8,894,222 shares of our common stock in the ATM Program for gross proceeds of \$3.0 million and net proceeds, after deducting sales commissions and other offering expenses paid by us, of \$2.8 million. In addition, subsequent to our fiscal year end through March 26, 2018 the Company sold 6,101,312 shares of its common stock for approximate net proceeds of \$1.8 million, after deducting sales commissions and other offering expenses paid by the Company.

2017 Offering

On August 22, 2017, we completed the 2017 Offering for net proceeds to us of \$4.4 million, after deducting underwriting discounts and commissions and offering expenses paid by us.

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TRGP Agreement

On May 3, 2017, we entered into the TRGP Agreement, which generally provides that TRGP will directly fund the costs incurred by us or on our behalf in connection with our first ITC action and our U.S. district court proceedings against SK hynix. In 2017, TRGP directly paid \$10.2 million of legal expenses on our behalf incurred in connection with these proceedings.

2016 Offering

On September 23, 2016, we completed an underwritten registered public offering (the “2016 Offering”), pursuant to which we sold 9,200,000 shares of our common stock at a price to the public of \$1.25 per share. The net proceeds to us from the 2016 Offering were \$10.3 million, after deducting underwriting discounts and commissions and offering expenses paid by us.

SVB Credit Agreement

On October 31, 2009, we entered into the SVB Credit Agreement, which provides that we may borrow up to the lesser of 80% of eligible accounts receivable or \$5.0 million, subject to certain adjustments as set forth in the SVB Credit Agreement. On March 20, 2018, the Company and SVB entered into another amendment to the SVB Credit Agreement to among other things, (i) extend the maturity date of advances under the SVB Credit Agreement to March 31, 2019 and (ii) revise certain inventory reporting requirements under the SVB Credit Agreement.

As of December 30, 2017, we had outstanding borrowings under the SVB Credit Agreement of \$2.0 million. We made net borrowings of \$1.3 million and \$0.7 million under the SVB Credit Agreement in the years ended December 30, 2017 and December 31, 2016, respectively. As of December 30, 2017 and December 31, 2016, we had borrowing availability under the SVB Credit Agreement of \$0.1 million and \$0.8 million, respectively.

Equipment Leasing Arrangements

We have in the past utilized equipment leasing arrangements to finance certain capital expenditures. Although equipment leases did not contribute material cash during the periods covered by this report, they continue to be a

financing alternative that we may pursue in the future.

Sufficiency of Cash Balances and Potential Sources of Additional Capital

Our capital requirements depend on many factors, including, among others: the acceptance of, and demand for, our products and the component products we resell; our levels of net product revenues and any other revenues we may receive, including NRE, license, royalty or other fees; the extent and timing of any investments in developing, marketing and launching new or enhanced products or technologies; the costs of developing, improving and maintaining our internal design, testing and manufacturing processes; the costs associated with maintaining, defending and enforcing our intellectual property rights; and the nature and timing of acquisitions and other strategic transactions or relationships in which we engage, if any.

We believe our existing cash balance, together with cash provided by our operations and borrowing availability under the SVB Credit Agreement and funds raised through the ATM and taking into account cash expected to be used in our operations, will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, our estimates of our operating revenues and expenses and working capital requirements could be incorrect and we may use our cash resources faster than we anticipate. Further, some or all of our ongoing or planned investments may not be successful and could further deplete our capital without immediate, or any, cash returns. Until we can generate sufficient revenues to finance our cash requirements from our operations, 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 or pursuing

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alternative sources of capital, such as through asset or technology sales or licenses or other alternative financing arrangements. Further, even if our near-term liquidity expectations prove correct, we may still seek to raise capital through one or more of these financing alternatives. However, we may not be able to obtain capital when needed or desired, on terms acceptable to us or at all.

Inadequate working capital 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. A lack of sufficient funding may also require us to significantly modify our business model and/or reduce or cease our operations, which could include implementing cost-cutting measures or delaying, scaling back or eliminating some or all of our ongoing and planned investments in corporate infrastructure, research and development projects, business development initiatives and sales and marketing activities, among other activities. 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. Additionally, if we are not able to maintain the listing of our common stock on the Nasdaq Capital Market, the challenges and risks of equity financings may significantly increase, including potentially increasing the dilution of any such financing or decreasing our ability to effect such a financing at all. If we incur additional debt, it may increase our leverage relative to our earnings or to our equity capitalization or have other material consequences. If we pursue asset or technology sales or licenses or other alternative financing arrangements to obtain additional capital, our operational capacity may be limited and any revenue streams or business plans that are dependent on the sold or licensed assets may be reduced or eliminated. Moreover, we may incur substantial costs in pursuing any future capital-raising transactions, including investment banking, legal and accounting fees, printing and distribution expenses and other similar costs, which would reduce the benefit of the capital received from the transaction.

Off-Balance Sheet Arrangements.

We do not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditure or capital resources that is material to investors.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not applicable.

Item 8. Financial Statements and Supplementary Data

The financial statements and supplementary data required by this Item 8 are included immediately following the signature page of this report and are incorporated herein by reference.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed by us in reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosures.

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Our management conducted an evaluation, with the participation of our principal executive officer and principal financial officer, of the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of December 30, 2017.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for our Company, as such term is defined in Rule 13a-15(f) under the Exchange Act. Our management conducted an evaluation, with the participation of our principal executive officer and principal financial officer, of the effectiveness of our internal control over financial reporting as of December 30, 2017, based on the criteria set forth in the 2013 Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 30, 2017.

This report does not include an attestation report of our independent registered public accounting firm regarding our internal control over financial reporting, in accordance with applicable SEC rules that permit us to provide only management's report in this report.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during our most recently completed fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Disclosure Controls and Procedures and Internal Control Over Financial Reporting

In designing our disclosure controls and procedures and internal control over financial reporting, management recognizes that any control system, no matter how well-designed and operated, can provide only reasonable, not absolute, assurance of achieving the desired control objectives. Further, the design of our controls and procedures must reflect the fact that there are resource constraints, and management necessarily applies its judgment in evaluating the benefits of possible controls and procedures relative to their costs. Because of the inherent limitations, our disclosure and internal controls may not prevent or detect all instances of fraud, misstatements or other control issues,

and our evaluations of disclosure and internal controls cannot provide assurance that all such control issues have been detected.

In addition, projections of any evaluation of the effectiveness of disclosure or internal controls to future periods are subject to risks, including, among others, that controls may become inadequate because of changes in conditions or that compliance with policies or procedures may deteriorate.

Item 9B. Other Information

On March 29, 2018, we received a letter from Nasdaq notifying us that our securities are subject to delisting from the Nasdaq Capital Market because we are not in compliance with certain of Nasdaq's requirements for continued listing. Specifically, (i) we failed to comply with Nasdaq Listing Rule 5550(a)(2) in September 2017 because, for a period of 30 consecutive business days, the bid price of our common stock had not closed at or above the minimum of \$1.00 per share, (ii) we failed to regain compliance with this rule within the 180-day period afforded to us by Nasdaq rules to regain compliance, and (iii) we are not automatically eligible for a 180-day extension of the deadline to regain compliance with this rule due to our failure to comply with the stockholders' equity initial listing requirement for the Nasdaq Capital Market as of our most recent financial statement reporting date. As described elsewhere in this annual report, we also are not in compliance with certain other Nasdaq listing rules, including Nasdaq Listing Rule 5550(b)(2), which we violated because, in January 2018, the market value of our common stock, calculated based on the then-most recent total shares outstanding multiplied by the closing bid price per share, fell below a minimum of \$35.0 million for a period of 30 consecutive business days.

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In accordance with the Nasdaq Listing Rules 5800 Series, we are entitled to appeal the delisting determination to a Nasdaq Hearings Panel pursuant to the procedures set forth in these rules. A request for a hearing before such a Hearings Panel will stay the delisting of our common stock pending the Panel's decision. We have elected to pursue such an appeal, and we will request a hearing for our appeal within the time period prescribed by applicable Nasdaq listing rules. As a result, the Nasdaq delisting notification letter does not immediately impact our listing on the Nasdaq Capital Market, and our common stock remains listed thereon pending the results of our appeal. The likelihood of success on this appeal is unpredictable, see Item 1A. Risk Factors for more information.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference to the definitive proxy statement for our 2018 annual meeting of stockholders or an amendment to this report, in either case to be filed with the SEC within 120 days after the end of the fiscal year ended December 30, 2017.

Item 11. Executive Compensation

The information required by this item is incorporated by reference to the definitive proxy statement for our 2018 annual meeting of stockholders or an amendment to this report, in either case to be filed with the SEC within 120 days after the end of the fiscal year ended December 30, 2017.

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

The information required by this item is incorporated by reference to the definitive proxy statement for our 2018 annual meeting of stockholders or an amendment to this report, in either case to be filed with the SEC within 120 days after the end of the fiscal year ended December 30, 2017.

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

The information required by this item is incorporated by reference to the definitive proxy statement for our 2018 annual meeting of stockholders or an amendment to this report, in either case to be filed with the SEC within 120 days after the end of the fiscal year ended December 30, 2017.

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to the definitive proxy statement for our 2018 annual meeting of stockholders or an amendment to this report, in either case to be filed with the SEC within 120 days after the end of the fiscal year ended December 30, 2017.

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PART IV

Item 15. Exhibits, Financial Statement Schedules

(a)(1) Consolidated Financial Statements.

The following financial statements are included immediately following the signature page to this report and are filed in Part II, Item 8 of this report:

<u>Report of Independent Registered Public Accounting Firm</u>	F-2
<u>Consolidated Balance Sheets</u>	F-3
<u>Consolidated Statements of Operations</u>	F-4
<u>Consolidated Statements of Stockholders' (Deficit) Equity</u>	F-5
<u>Consolidated Statements of Cash Flows</u>	F-6
<u>Notes to Consolidated Financial Statements</u>	F-7

(a)(2) Financial Statement Schedules.

All financial statement schedules have been omitted, as they are not required, not applicable, or the required information is otherwise included.

(a)(3) Exhibits.

The information required by this Item 15(a)(3) is set forth on the Exhibit Index that immediately precedes the signature page to this report and is incorporated herein by reference.

Item 16. Form 10-K Summary.

We have elected not to provide summary information.

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EXHIBIT INDEX

Exhibit No.	Description
3.1	<u>Restated Certificate of Incorporation of Netlist, Inc. (incorporated by reference to exhibit 3.1 of the registration statement on Form S-1 of the registrant (No. 333-136735) filed with the SEC on October 23, 2006)</u>
3.1.1	<u>Certificate of Amendment to the Restated Certificate of Incorporation of Netlist, Inc. (incorporated by reference to exhibit 3.1.1 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2017)</u>
3.1.2	<u>Certificate of Designation of the Series A Preferred Stock of Netlist, Inc. (incorporated by reference to exhibit 3.1.2 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2017)</u>
3.2	<u>Amended and Restated Bylaws of Netlist, Inc. (incorporated by reference to exhibit number 3.1 of the registrant's Current Report on Form 8-K filed with the SEC on December 20, 2012)</u>
3.2.1	<u>Certificate of Amendment to Amended and Restated Bylaws of Netlist, Inc. (incorporated by reference to exhibit number 3.1 of the registrant's Current Report on Form 8-K filed with the SEC on December 29, 2017)</u>
4.1	<u>Form of Warrant issued pursuant to the Securities Purchase Agreement, dated July 17, 2013 (incorporated by reference to exhibit 4.1 of the registrant's Current Report on Form 8-K filed with the SEC on July 18, 2013)</u>
4.2	<u>Senior Secured Convertible Promissory Note, dated November 18, 2015, issued by Netlist, Inc. to SVIC No. 28 New Technology Business Investment LLP (incorporated by reference to exhibit 4.1 of the registrant's Current Report on Form 8-K filed with the SEC on November 19, 2015)</u>
4.3	<u>Stock Purchase Warrant, dated November 18, 2015, issued by Netlist, Inc. to SVIC No. 28 New Technology Business Investment LLP (incorporated by reference to exhibit 4.2 of the registrant's Current Report on Form 8-K filed with the SEC on November 19, 2015)</u>
4.4	<u>Stock Purchase Warrant, dated November 18, 2015, issued by Netlist, Inc. (incorporated by reference to exhibit 4.4 of the registrant's Annual Report on Form 10-K filed with the SEC on March 31, 2017)</u>

- 4.5 Rights Agreement, dated as of April 17, 2017, by and between Netlist, Inc. and Computershare Trust Company, N.A., as rights agent (incorporated by reference to exhibit 4.1 of the registrant's Current Report on Form 8-K filed with the SEC on April 17, 2017)
- 10.1# Form of Indemnity Agreement for officers and directors (incorporated by reference to exhibit 10.12 of the registration statement on Form S-1 of the registrant (No. 333-136735) filed with the SEC on August 18, 2006)
- 10.2# Employment Agreement, dated September 5, 2006, between Netlist, Inc. and Chun K. Hong (incorporated by reference to exhibit 10.13 of the registration statement on Form S-1 of the registrant (No. 333-136735) filed with the SEC on September 27, 2006)
- 10.3# Amended and Restated 2006 Equity Incentive Plan of Netlist, Inc. (incorporated by reference to exhibit 10.1 of the registrant's Current Report on Form 8-K filed with the SEC on June 9, 2016)

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- 10.4# Form of Restricted Stock Award Agreement issued pursuant to the 2006 Equity Incentive Plan of Netlist, Inc. (incorporated by reference to exhibit 10.2 of the Quarterly Report on Form 10-Q of the registrant filed with the SEC on May 17, 2010)
- 10.5# Form of Stock Option Award Agreement issued pursuant to the 2006 Equity Incentive Plan of Netlist, Inc. (incorporated by reference to exhibit 10.6 of the registrant's Annual Report on Form 10-K filed with the SEC on March 31, 2017)
- 10.6 Loan and Security Agreement, dated October 31, 2009, between Silicon Valley Bank and Netlist, Inc. (incorporated by reference to exhibit 10.1 of the registrant's Current Report on Form 8-K filed with the SEC on November 2, 2009)
- 10.7 Intercompany Subordination Agreement, dated October 31, 2009, among Silicon Valley Bank, Netlist, Inc., and Netlist Technology Texas, L.P. (incorporated by reference to exhibit 10.2 of the registrant's Current Report on Form 8-K filed with the SEC on November 2, 2009)
- 10.8 Guarantor Security Agreement, dated October 31, 2009, between Silicon Valley Bank and Netlist Technology Texas LP (incorporated by reference to exhibit 10.3 of the registrant's Current Report on Form 8-K filed with the SEC on November 2, 2009)
- 10.9 Intellectual Property Security Agreement, dated October 31, 2009, between Silicon Valley Bank and Netlist, Inc. (incorporated by reference to exhibit 10.4 of the registrant's Current Report on Form 8-K filed with the SEC on November 2, 2009)
- 10.10 Amendment to Loan Documents, dated March 24, 2010, between Silicon Valley Bank and Netlist, Inc. (incorporated by reference to exhibit 10.1 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on May 17, 2010)
- 10.11 Amendment to Loan Documents, dated June 30, 2010, between Silicon Valley Bank and Netlist, Inc. (incorporated by reference to exhibit 10.2 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 12, 2010)
- 10.12 Amendment to Loan Documents, dated September 30, 2010, between Silicon Valley Bank and Netlist, Inc. (incorporated by reference to exhibit 10.1 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on November 17, 2010)
- 10.13 Amendment to Loan Documents, dated May 11, 2011, between Silicon Valley Bank and Netlist, Inc. (incorporated by reference to exhibit 10.1 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on May 12, 2011)

- 10.14 Amendment to Loan Documents, dated August 10, 2011, between Silicon Valley Bank and Netlist, Inc. (incorporated by reference to exhibit 10.1 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2011)
- 10.15 Amendment to Loan Documents, dated May 14, 2012, between Silicon Valley Bank and Netlist, Inc. (incorporated by reference to exhibit 10.1 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on May 15, 2012)
- 10.16 Forbearance to Loan and Security Agreement, dated March 27, 2013, between Netlist, Inc. and Silicon Valley Bank (incorporated by reference to exhibit 10.32 of the registrant's Annual Report on Form 10-K for the fiscal year ended December 29, 2012 filed with the SEC on March 29, 2013)

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- 10.17 Amendment to Credit Agreement, dated July 17, 2013, between Netlist, Inc. and Silicon Valley Bank (incorporated by reference to exhibit 10.6 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on November 12, 2013)
- 10.18 Amendment to Loan Documents, dated September 30, 2014, between Netlist, Inc. and Silicon Valley Bank (incorporated by reference to exhibit 10.24 of the registrant's Annual Report on Form 10-K filed with the SEC on March 27, 2015)
- 10.19 Senior Secured Convertible Promissory Note and Warrant Purchase Agreement, dated November 18, 2015, between Netlist, Inc. and SVIC No. 28 New Technology Business Investment LLP (incorporated by reference to exhibit 10.1 of the registrant's Current Report on Form 8-K filed with the SEC on November 19, 2015)
- 10.20 Registration Rights Agreement, dated November 18, 2015, between Netlist, Inc. and SVIC No. 28 New Technology Business Investment LLP (incorporated by reference to exhibit 10.2 of the registrant's Current Report on Form 8-K filed with the SEC on November 19, 2015)
- 10.21 Amendment to Loan Documents, dated January 29, 2016, between Netlist, Inc. and Silicon Valley Bank (incorporated by reference to exhibit 10.1 of the registrant's Current Report on Form 8-K filed with the SEC on February 1, 2016)
- 10.22 Amendment to Loan Documents, dated March 27, 2017, between Netlist, Inc. and Silicon Valley Bank (incorporated by reference to exhibit 10.1 of the registrant's Current Report on Form 8-K filed with the SEC on March 29, 2017)
- 10.23 Amendment to Loan and Security Agreement, dated April 12, 2017, by and between Netlist, Inc. and Silicon Valley Bank (incorporated by reference to exhibit 10.1 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2017)
- 10.24§ Investment Agreement, dated May 3, 2017, by and between Netlist, Inc. and TR Global Funding V, LLC (incorporated by reference to exhibit 10.2 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2017)
- 10.25 Security Agreement, dated May 3, 2017, by and between Netlist, Inc. and TR Global Funding V, LLC (incorporated by reference to exhibit 10.3 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2017)
- 10.26 Intercreditor Agreement, dated May 3, 2017, by and between SVIC No. 28 New Technology Business Investment L.L.P. and TR Global Funding V, LLC and consented and agreed to by Netlist, Inc. (incorporated by reference to exhibit 10.4 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2017)

- 10.27 Intercreditor Agreement, dated May 3, 2017, by and between Silicon Valley Bank and TR Global Funding V, LLC and consented and agreed to by Netlist, Inc. (incorporated by reference to exhibit 10.5 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2017)
- 10.28 Amended and Restated Intercreditor Agreement, dated April 20, 2017, by and between SVIC No. 28 New Technology Business Investment L.L.P and Silicon Valley Bank and consented and agreed to by Netlist, Inc. (incorporated by reference to exhibit 10.6 of the registrant's Quarterly Report on Form 10-Q filed with the SEC on August 15, 2017)
- 21.1+ Subsidiaries of Netlist, Inc.

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23+	<u>Consent of KMJ Corbin & Company LLP</u>
24+	<u>Power of Attorney (included on the signature page to this report)</u>
31.1+	<u>Certification of Chief Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Exchange Act, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>
31.2+	<u>Certification of Chief Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Exchange Act, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>
32++	<u>Certification by Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>
101.INS+	XBRL Instance Document
101.SCH+	XBRL Taxonomy Extension Schema Document
101.CAL+	XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB+	XBRL Taxonomy Extension Label Linkbase Document
101.PRE+	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF+	XBRL Taxonomy Extension Definition Linkbase Document
+	Filed herewith.
++	Furnished herewith.
#	Management contract or compensatory plan or arrangement.
§	Confidential treatment has been granted with respect to portions of this exhibit pursuant to Rule 24b-2 under the Exchange Act, and these confidential portions have been redacted from the version of this agreement that is filed with this report. A complete copy of this exhibit, including the redacted portions, has been separately furnished to the SEC.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: March 30, 2018

Netlist, Inc.

By: /s/ Chun K. Hong
Chun K. Hong
President, Chief Executive Officer and
Chairman of the Board

POWER OF ATTORNEY

IN WITNESS WHEREOF, each person whose signature appears below constitutes and appoints Chun K. Hong and Gail Sasaki as his or her true and lawful agent, proxy and attorney-in-fact, each acting alone, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to (i) act on and sign any amendments to this Annual Report on Form 10-K, with exhibits thereto and other documents in connection therewith, (ii) act on and sign such certificates, instruments, agreements and other documents as may be necessary or appropriate in connection therewith, and in each case file the same with the Securities and Exchange Commission, hereby approving, ratifying and confirming all that such agent, proxy and attorney-in-fact or any of his substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Chun K. Hong Chun K. Hong	President, Chief Executive Officer and Chairman of the Board (Principal	March 30, 2018

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Executive Officer)

/s/ Gail Sasaki Gail Sasaki	Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 30, 2018
/s/ Jun S. Cho Jun S. Cho	Director	March 30, 2018
/s/ Kiho Choi Kiho choi	Director	March 30, 2018
/s/ Blake A. Welcher Blake A. Welcher	Director	March 30, 2018
/s/ Jeff Benck Jeff Benck	Director	March 30, 2018

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of

Netlist, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Netlist, Inc. and subsidiaries (the “Company”) as of December 30, 2017 and December 31, 2016, the related consolidated statements of operations, stockholders’ deficit, and cash flows for each of the years then ended, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 30, 2017 and December 31, 2016, and the results of its operations and its cash flows for each of the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures

included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KMJ Corbin & Company LLP

We have served as the Company's auditor since 2005.

Costa Mesa, California
March 30, 2018

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NETLIST, INC. AND SUBSIDIARIES

Consolidated Balance Sheets

(in thousands, except par value amounts)

	December 30, 2017	December 31, 2016
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 6,720	\$ 9,476
Restricted cash	2,800	3,100
Accounts receivable, net of reserves of \$44 (2017) and \$151 (2016)	2,997	1,751
Inventories	4,105	3,160
Prepaid expenses and other current assets	303	1,766
Total current assets	16,925	19,253
Property and equipment, net	459	645
Other assets	1,406	70
Total assets	\$ 18,790	\$ 19,968
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current Liabilities:		
Accounts payable	\$ 6,120	\$ 4,028
Revolving line of credit	2,024	676
Accrued payroll and related liabilities	807	1,085
Accrued expenses and other current liabilities	338	270
Notes payable and capital lease obligation, current	-	151
Total current liabilities	9,289	6,210
Convertible promissory note and accrued interest, net of debt discount	14,766	14,251
Long-term warranty liability	61	36
Total liabilities	24,116	20,497
Commitments and contingencies		
Stockholders' deficit:		
Preferred stock, \$0.001 par value - 10,000 shares authorized:		
Series A preferred stock, \$0.001 par value; 1,000 shares authorized; none issued and outstanding	-	-
Common stock, \$0.001 par value - 150,000 shares authorized (2017) and 90,000 shares authorized (2016); 79,314 (2017) and 61,653 (2016) shares issued and	80	62

outstanding		
Additional paid-in capital	152,640	144,035
Accumulated deficit	(158,046)	(144,626)
Total stockholders' deficit	(5,326)	(529)
Total liabilities and stockholders' deficit	\$ 18,790	\$ 19,968

See accompanying notes to consolidated financial statements.

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NETLIST, INC. AND SUBSIDIARIES

Consolidated Statements of Operations

(in thousands, except per share amounts)

Year Ended
December 30, December 31,