LSI LOGIC CORP
Form 10-K
March 15, 2004

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

# FORM 10-K

**(Mark One)**

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

**For the Fiscal Year Ended December 31, 2003**

**OR**

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

**For the transition period from _____ to _____ .**

**Commission File No. 0-11674**

# LSI LOGIC CORPORATION
**(Exact name of registrant as specified in its charter)**

| **DELAWARE** | **94-2712976** |
|---|---|
| **(State or other jurisdiction of incorporation or organization)** | **(IRS Employer Identification No.)** |

**1621 Barber Lane**
**Milpitas, California 95035**
**(Address of principal executive offices) (Zip Code)**

**Registrant s telephone number, including area code: (408) 433-8000**

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

| **Title of each class** | **Name of each Exchange on which registered** |
|---|---|
| Common Stock, $0.01 par value | New York Stock Exchange |
| Preferred Share Purchase Rights | New York Stock Exchange |

**Securities registered pursuant to Section 12(g) of the Act:**
**NONE**
**(Title of class)**

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 x No o

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 the definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

Indicate by checkmark whether the Registrant is an accelerated filer (as defined in Rule 12b-2 of the Act.

Yes x No o

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the Registrant, based upon the closing price of the Common Stock on June 27, 2003, as reported on the New York Stock Exchange, was approximately $2,537,575,005. Shares of Common Stock held by each executive officer and director and by each person who owns more than 5% of the outstanding Common Stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 11, 2004, the Registrant had 381,904,398 shares of Common Stock outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Parts of the following document are incorporated by reference into Part III of this Form 10-K Report: Proxy Statement for Registrant s 2004 Annual Meeting of Stockholders to be held on May 6, 2004.

**FORWARD-LOOKING STATEMENTS**

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Actual results could differ materially from those projected in the forward-looking statements as a result of a number of risks and uncertainties, including the risk factors set forth below and elsewhere in this Report. See Risk Factors in Part I, Item 1 and Factors that may Affect Future Results in Management s Discussion and Analysis of Financial Condition and Results of Operations in Part II, Item 7 below. Statements made herein are as of the date of the filing of this Form 10-K with the Securities and Exchange Commission and should not be relied upon as of any subsequent date. We expressly disclaim any obligation to update information presented herein, except as may otherwise be required by law.

**PART I**

**Item 1.** ***Business***

**General**

LSI Logic Corporation (together with its subsidiaries collectively referred to as LSI Logic , LSI or the Company and referred to as we , u and our ) is a leader in the design, development, manufacture and marketing of complex, high-performance integrated circuits and storage systems. We are focused on four markets: communications, consumer products, storage components and storage systems. Our integrated circuits are used in a wide range of communication devices, including devices used for wireless and broadband data networking applications. We also provide other types of integrated circuit products and board-level products for use in consumer applications, high-performance storage controllers and systems for storage area networks.

We operate in two segments - the Semiconductor segment and the Storage Systems segment - in which we offer products and services for a variety of electronic systems applications. Our products are marketed primarily to original equipment manufacturers ( OEMs ) that sell products targeted for applications in our major markets.

For the year ended December 31, 2003, revenues from the Semiconductor segment were $1,270 million (75% of total consolidated revenues) and the loss from operations was $296 million. In the Semiconductor segment, we use advanced process technologies and comprehensive design methodologies to design, develop, manufacture and market highly complex integrated circuits ( ICs ). These system-on-a-chip solutions include both application specific integrated circuits, commonly referred to as ASICs, and standard products. Semiconductor segment product offerings also include redundant array of independent disks ( RAID ), host bus adapters and related products and services. ASICs are designed for specific applications defined by the customer, whereas standard products are for market applications that we define. See also Management s Discussion and Analysis of Financial Condition and Results of Operations in Item 7 of Part II.

We have developed methods of designing integrated circuits based on a library of building blocks of industry-standard electronic functions, interfaces and protocols. Among these is our CoreWare® design methodology. Our advanced submicron manufacturing process technologies allow our customers to combine one or more CoreWare library elements with memory and their own proprietary logic to integrate a highly complex, system-level solution on a single chip. We have developed and use complementary metal oxide semiconductor ( CMOS ) process technologies to manufacture our integrated circuits.

For the year ended December 31, 2003, revenues from the Storage Systems segment were $423 million (25% of total consolidated revenues) and the income from operations was $23 million. In the Storage Systems segment, our enterprise storage systems are designed, manufactured and sold by our wholly owned subsidiary - LSI Logic Storage Systems, Inc. ( Storage Systems or Storage Systems segment ). Our high-performance, highly scalable open storage area network systems and storage solutions

are available through leading OEMs and a specialized network of resellers. Products and solutions distributed through these channels may exclude LSI Logic Storage Systems brand identification. When included, LSI Logic Storage Systems brand identity may appear alone or in tandem with OEM brand identification.

In November 2003, the Company announced its intention to separate the Storage Systems segment and create an independent storage systems company. On February 19, 2004, LSI Logic Storage Systems, Inc. filed a registration statement on Form S-1 with the Securities and Exchange Commission for the initial public offering of its common stock.

LSI Logic Corporation was incorporated in California on November 6, 1980, and was reincorporated in Delaware on June 11, 1987. Our principal offices are located at 1621 Barber Lane, Milpitas, California 95035, and our telephone number at that location is (408) 433-8000. Our home page on the Internet is www.lsilogic.com. The contents of this website are not incorporated in or otherwise to be regarded as part of this annual report on Form 10-K. Copies of this and other annual reports, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to these reports are available free of charge on our website as soon as reasonably practicable after such documents are filed electronically with the Securities and Exchange Commission. Any materials that the Company files with the SEC can be read and copied at the SEC s Public Reference Room at 450 Fifth Street, N.W. Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330.

**Business Strategy**

Semiconductor Business Strategy

Our objective is to continue our industry leadership in the design, development, manufacture and marketing of highly integrated, complex integrated circuits and other electronic components and system-level products that provide our customers with silicon-based system-level solutions. To achieve this objective, our business strategy includes the following key elements:

- *Target Growth Markets and Selected Customers.* We concentrate our sales and marketing efforts on leading OEM customers in targeted growth markets, including communications, consumer products and storage components applications. Our engineering expertise is focused on developing technologies that will meet the needs of leading-edge customers in order to succeed in these market areas.

- *Emphasize CoreWare Methodology and System-on-a-Chip Capability*. Our CoreWare® design methodology enables the integration of one or more pre-designed circuit elements with customer-specified elements and memory to create system capabilities on a single chip. This results in higher product functionality, higher performance, greater differentiation and faster time to market. We also have used this design methodology to develop proprietary standard products.

We leverage our in-depth system-level expertise, extensive CoreWare IP library, innovative technology, understanding of customer requirements and philosophy of providing predictable Right First Time, On Time silicon solutions to serve customers with highly specific needs in the communications, consumer and storage markets worldwide.

We have expanded our technology product offerings to include the RapidChip product. The RapidChip platform ASIC fills the void between the field programmable gate arrays ( FPGAs ) and standard-cell ASIC product spaces by combining the best attributes of both. RapidChip combines the high-density, high-performance benefits of standard-cell ASICs with the fast time-to-market and customization benefits of FPGAs. This is done by addressing areas in the construction of complex custom ICs that have the greatest impact on a design schedule.

- *Promote Highly Integrated Design and Manufacturing Technology*. We use proprietary and leading third-party electronic design automation, or EDA, software design tools. Our design tool

environment is highly integrated with our manufacturing process requirements so that it will accurately simulate product performance. This integration reduces design time and project cost. We continually evaluate and, as appropriate, develop expertise with third-party EDA tools from leading and emerging suppliers of such products.

- *Provide Flexibility in Design Engineering*. We engage with customers of our semiconductor products under various arrangements whereby the extent of the engineering support we provide will be determined in accordance with the customer s requirements. For example, a customer may primarily use its own engineers for substantial development of its product design and retain our support for silicon-specific engineering work. We also enter into engineering design projects, including those on a turn-key basis.

- *Maintain High-Quality and Cost-Effective Manufacturing*. Our manufacturing strategy is a combination of our own manufacturing facilities and outsourcing arrangements with third-party foundries. We perform substantially all of our packaging, assembly and final test operations through subcontractors in Asia.

- *Leverage Alliances with Key Partners*. We are continually seeking to establish relationships with key partners in a diverse range of semiconductor technologies to promote new products, services, operating standards and manufacturing capabilities and to avail ourselves of cost efficiencies that may be obtained through collaborative development.

- *Forge Successful Partnerships with Leading Distribution Partners.* Our partner program is designed to effectively market the Company s host bus adapter product families utilizing distribution and reseller partnerships. Such partnerships enable us to provide an extended population of customers with the full range of product offerings, services and support needed to ensure their success.

- *Develop and Drive Industry Standards to Achieve Market Advantage*. We are a leader in developing and promoting important industry standard architectures, functions, protocols and interfaces. We believe that this strategy will enable us to quickly launch new standard-based products, allowing our customers to achieve time-to-market and other competitive advantages.

- *Operate Worldwide*. We market our products and engage with our customers on a worldwide basis through direct sales, marketing and field technical staff and through independent sales representatives and distributors. Our network of design centers located in major markets allows us to provide customers with highly experienced engineers, to interact with customer engineering management and system architects, to develop designs for new products and to provide continuing after-sale customer support.

Storage Systems Business Strategy

Our objective is to be the leading provider to server and storage OEMs and value added resellers ( VARs ) of modular disk storage systems and sub-assemblies. We intend to enhance our market position by:

- *Continuing to innovate and extend our product offering.* We intend to lead the market in adopting and implementing new storage system technologies, interfaces, features and customer requirements. In addition, we intend to define, design and develop products that enable our channel customers to offer a broad storage system product line, which incorporates their own intellectual property, to address multiple markets. In this manner, we intend to continue to expand our product offerings further into the entry-level, mid-range and high-end markets.

- *Adding feature functionality to meet expanding enterprise requirements.* Implementation and management of storage systems within the enterprise is increasingly complex. To address this increasing complexity, we plan to develop additional premium software management and hardware system features to enhance reliability, data availability and serviceability of our products. We also intend to expand our LogicStor certified application implementation guides, which are designed to help our customers rapidly implement our products for specific business applications.

- *Enhancing interoperability among our products, our customers products and other leading enterprise products.* We provide significant value to our channel customers and enterprises by testing and certifying our products with the products of other leading enterprise information technology vendors to ensure broad interoperability and compatibility. We intend to work closely with our channel customers and enterprises to extend and enhance the capabilities of our storage sub-assemblies and storage management software. We also seek to enhance our position in the storage industry by actively participating in a variety of organizations focused on developing standards for emerging technologies and facilitating industry-wide interoperability.

- *Obtaining new channel customers.* Our channel customers sell storage solutions based on or incorporating our products and technology through their direct sales forces and other channels. We will continue to seek new customers, including in international markets, and thereby expand the total marketing and sales resources focused on our products. In this manner, we intend to increase the market addressable by our products.

- *Expanding our joint marketing and sales efforts with existing and new channel customers.* We seek to add value to our customers sales, marketing and support initiatives through the provision of extensive training, customized go-to-market campaigns, product positioning, marketing materials, competitive analysis and product support infrastructure. We maintain 13 Experience Centers worldwide**,** which allow our channel customers to demonstrate to enterprise users the performance and benefits of storage deployments incorporating our products. We plan to open additional centers to reach a broader customer base in the future.

- *Promoting our brand.* We believe that a strong association of our brand with innovation and integrity is valuable in achieving increased scale, market leadership and OEM acceptance within our industry. Furthermore, we believe that brand recognition and reputation will become more important as OEMs increasingly outsource their storage system offerings and their customers focus on the performance and reliability of the storage systems or sub-assemblies integrated into OEM storage solutions. We intend to continue to promote our brand and build brand equity to establish and bolster our position in the disk storage systems and related storage management software markets.

**Technology, Products and Services**

ASIC Technology

We have been continuously supplying ASIC products for over 20 years. We leverage our system level expertise and technology providing silicon solutions primarily in communications, consumer and storage markets worldwide.

Our CoreWare design methodology offers a comprehensive design approach for creating a system-on-a-chip efficiently, predictably and rapidly. Our CoreWare libraries include high-level intellectual property building blocks created around industry standards. Our CoreWare cells are connected electronically with other memory and logic elements to form an entire system on a single chip.

Our continued emphasis on cell-based product lines reflects the market preference for use of this methodology to develop advanced integrated circuits. Customers obtain greater flexibility in the design of system-level products using our cell-based technology than they do with other technologies.

We have expanded our technology product offerings to include the RapidChip product in addition to our cell-based product lines. Our new RapidChip products address a growing market need for a flexible, cost-effective and fast time-to-market solution with performance comparable to cell-based ASICs and at a cost significantly lower than FPGAs. RapidChip is an innovative semiconductor platform set to reshape the way complex chips are designed and manufactured. A key feature of RapidChip is the customer-friendly interface that dramatically simplifies the underlying complexity of the design tools and flows associated

with system-on-a-chip design. Rule sets automatically manage architectural design, verification and physical design. As a result, design schedules for high-performance chips can be more predictable.

LSI Logic works with customers to pre-define RapidSlices™ applicable to the communications, consumer products, storage market areas and other markets to provide the basis for rapid personalization of the RapidChip to help meet the customer product objectives. A slice is a pre-manufactured chip in which all silicon-based layers have been built, leaving the top metal layers to be completed with the customer s unique intellectual property.

We shipped our first RapidChip platform products in the fourth quarter of 2003. We have recorded numerous design wins to date with existing and new customers. We believe the RapidChip platform product fills a growing gap between the traditional ASIC and FPGA solutions, complementing our ASIC product offerings.

Typically, the ASIC design process involves participation by both LSI Logic and customer engineers. We engage our customers early in their new system product development process and accept large design assignments where we share development costs with the customer. We provide advice on the product design strategies to optimize product performance and suitability for the targeted application. In addition, our capabilities include support in the areas of architecture and system-level design simulation, verification and synthesis used in the development of complex integrated circuits.

Our software design tool environment supports and automatically performs key elements of the design process from circuit concept to physical layout of the circuit design. The design tool environment features a combination of internally developed proprietary software and third-party tools that are highly integrated with our manufacturing process requirements. The design environment includes expanded interface capabilities with a range of third-party tools from leading EDA vendors and features hardware/software co-verification capability. We provide a suite of MIPS cores and ARM processors, in addition to industry-standard bus interface cores such as USB, IEEE 1394, and PCI.

After completion of the ASIC engineering design effort, we produce and test prototype circuits for shipment to the customer. We then begin volume production of integrated circuits that have been developed through one or more of the arrangements described above in accordance with the customer s quantity and delivery requirements.

Semiconductor Products

In our semiconductor components business, we design, manufacture and supply ASICs, standard products, host adapter boards and RAID host adapter board software to customers competing in global communications, consumer and storage markets.

ASICs are semiconductors that are designed for unique, customer-specified applications. Standard products are developed for market applications we define and are targeted to be sold to multiple customers. Both ASIC and standard products are sold to customers for incorporation into system-level products and may incorporate our intellectual property building blocks. Our ASICs, RapidChip and standard products are predominantly designed and manufactured using our proprietary process technologies.

*Communications*

LSI Logic offers highly integrated, high-performance, system-on-a-chip silicon solutions for use in the design of communications equipment. We focus on delivering custom ASIC and RapidChip solutions to customers who develop systems for the Enterprise, Metropolitan, and Wide Area Network sectors.

Leading edge switches and routers require multi-gigabit throughput capability. LSI Logic s HyperPHY® SerDes (Serializer-Deserializer) technology enables chip-to-chip and back-plane connectivity at speeds in excess of 3Gbits/second. We also provide our customers with CoreWare

intellectual property in support of key industry standard interconnect technologies including Rapid IO, HyperTransport, SPI-4, 5, SFI-4, 5, NPSI and 10/100/1G/10G Ethernet.

In addition to customer logic, our solutions incorporate embedded ARM, MIPS, digital signal processors ( DSPs ) as well as memory structures and mixed-signal cores. We provide each customer with the opportunity to deliver unique value in a custom silicon device.

*Consumer Products*

For the consumer market, we offer a broad array of products, including both standard products and custom solutions.

*Consumer standard products.* We design, develop, manufacture and market semiconductor devices, software and reference designs for digital video and audio applications, enabling new digital video and audio applications. We are focused on providing solutions for rapidly growing applications such as DVD players, digital set-top boxes, broadcast encoders, video editing systems, as well as emerging applications such as DVD recorders, home servers, and personal video recorders.

*Consumer custom solutions.* We also offer systems-on-a-chip for consumer applications. We focus on consumer market segments employing our intellectual property portfolio, design methodology and turn-key product offerings (including manufacturing, assembly and test) to provide a customized solution. Our main focus is in the video game console markets. Other market opportunities include digital cameras and camcorders, portable digital audio and video, personal digital assistant multimedia products and other emerging multimedia applications where an effective standard solution is not currently available. In addition, we provide standard products, device and applications software and reference designs for DSL modems, Home Gateways and embedded DSL applications. We are focused on the network-centric modem market for which we provide a complete reference platform. We also provide a variety of home connectivity solutions, both wired and wireless, based on this platform.

*Storage Components*

Our ASIC and standard product solutions offered to customers in worldwide storage component markets make possible data transmission and storage between a host computer and peripheral devices such as magnetic and optical disk drives, scanners, printers and disk and tape-based storage systems. We offer Fibre Channel and SCSI standard products, including host adapter ICs for motherboard and adapter applications, SCSI expander ICs, storage adapter boards and LSI s Fusion-MPT™ software drivers for these product families. We are also an industry leader in the on-going development of new storage interface standards and products, including Serial-Attached SCSI ( SAS ).

In addition, we offer the industry s widest spectrum of direct-attach RAID solutions, spanning from integrated RAID in our Fusion-MPT based-storage IC and adapter products and our IDEal software-based RAID products to our MegaRAID® product family. Our MegaRAID products include integrated single-chip RAID on motherboard solutions and a broad family of PCI, PCI Express and iSCSI RAID controller boards featuring ATA, Serial ATA ( SATA ) and SCSI interfaces, along with fully featured software and utilities for robust storage configuration and management.

We also offer solutions using our ASIC and RapidChip technology to customers who develop Fibre Channel storage area network ( SAN ) switches and host adapters, storage systems, hard disk drive and tape peripherals. Through leveraging our extensive experience in providing solutions for these applications, LSI Logic has developed a full portfolio of high-speed interface CoreWare that is employed on the ASIC or RapidChip platform providing a connection to the network, the SAN, memory and host buses. Using these pre-verified interfaces, our customers reduce development risk and achieve quicker time to market. Our CoreWare offerings include the GigaBlaze® high performance SerDes Core supporting Fibre Channel, SATA, Gigabit Ethernet, Infiniband, SAS, serial RIO and PCI-Express industry standards and a family of high-performance Fibre Channel, RIO, PCI-E, SAS and SATA protocol controllers.

Storage Systems Products

We offer a broad line of open, modular storage products comprised of complete systems and sub-assemblies configured from modular components, such as our storage controller modules, disk drive enclosure modules and related management software, to address the needs of our customers. The modularity of our products provides channel customers with the flexibility either to integrate our sub-assemblies with third-party components, such as disk drives, and software to form their own storage system products. Our modular product approach allows channel customers to create highly customized storage systems, which can then be integrated with value-added software and services and delivered as a complete, differentiated data storage solution to enterprises.

We design and develop storage systems, sub-assemblies and management software that operate within all major open operating systems, including Windows, UNIX and UNIX variants and Linux environments. We test and certify our products, both independently and jointly with our customers, with those of other hardware, networking and software storage vendors to ensure a high level of interoperability and performance. Our products are targeted at a wide variety of data storage applications, including Internet-based applications such as online transaction processing and e-commerce, data warehousing, video editing and post-production and high-performance computing.

**Marketing and Distribution**

Semiconductor Marketing and Distribution

The highly competitive semiconductor industry is characterized by rapidly changing technology, short product cycles and emerging standards. Our marketing strategy requires that we accurately forecast trends in the evolution of product and technology development. We must then act upon this knowledge in a timely manner to develop competitively priced products offering superior performance. As part of this strategy, we are active in the formulation and adoption of critical industry standards that influence the design specifications of our products. Offering products with superior price and performance characteristics is essential to satisfy the rapidly changing needs of our customers in the dynamic communications, consumer and storage markets.

Our semiconductor products and design services are primarily sold through our network of direct sales and marketing and field engineering offices located in North America, Europe, Japan and elsewhere in Asia. Our sites are interconnected by means of advanced computer networking systems that allow for the continuous, uninterrupted exchange of information that is vital for the proper execution of our sales and marketing activities. International sales are subject to risks common to export activities, including governmental regulations, geopolitical risks, tariff increases and other trade barriers and currency fluctuations.

We rely primarily on direct sales and marketing, but we also work with independent component and commercial distributors and manufacturers representatives or other channel partners in North America, Europe, Japan and elsewhere in Asia. Some of our distributors possess engineering capabilities, and design and purchase both ASICs and standard products from us for resale to their customers. Other distributors focus solely on the sale of standard products. Our agreements with distributors generally grant limited rights to return standard product inventory and we defer revenue for such inventory until the distributor sells the product to a third party.

Storage Systems Marketing and Distribution

Our products are sold worldwide through our channel customers and, to a smaller degree, to a limited installed base of end-users. We closely develop and manage our channel customer relationships to meet the diverse needs and requirements of enterprises. By selling products through our channel customers, we are able to address more markets, reach a greater number of enterprises, reduce our overall sales and marketing

expenditures and amortize our research and development costs across a larger base of product sales volumes.

Our marketing efforts are designed to support our channel customers with programs targeted at developing differentiated go-to-market strategies and increasing sales effectiveness. Depending on the nature of our channel customer engagement, our marketing teams offer various levels of assistance in assessing and analyzing the competitive landscape, defining product strategy and roadmap, developing product positioning and pricing, creating product launch support materials and assisting in closing sales processes. These marketing teams carefully coordinate joint product development and marketing efforts between our customers and us to ensure that we address and effectively target enterprise requirements. We maintain sales and marketing organizations at our headquarters in Milpitas, and also in regional offices in Atlanta, Georgia; Dallas, Texas; Chicago, Illinois; Houston, Texas; Los Angeles, California; New York, New York; Parsippany, New Jersey; Reston, Virginia and Wichita, Kansas. We also market our products internationally in China, France, Germany, Japan and the United Kingdom.

**Customers**

In 2003, Sony and IBM accounted for approximately 13% and 15% of our consolidated revenues, respectively. No other customer accounted for greater than 10% of consolidated revenues. We have a highly concentrated customer base and we are dependent on a limited number of customers for a substantial portion of revenues as a result of our strategy to focus our marketing and selling efforts on select, large-volume customers. The loss of any of our significant customers, any substantial decline in sales to these customers, or any significant change in the timing or volume of purchases by our customers, could result in lower revenues and could harm our business, financial condition and results of operation.

Semiconductor Customers

We seek to leverage our expertise in the fields of communications, consumer and storage components by marketing our products and services to market leaders. Our strategic-account focus is on large, well-known companies that produce high-volume products incorporating our semiconductor products. We recognize that this strategy may result in increased dependence on a limited number of customers for a substantial portion of our revenues. It is possible that we will not achieve significant sales volumes from one or more of the customers we have selected. While this could result in lower revenues and higher unit costs owing to an under-utilization of our resources, we believe this strategy provides us with the greatest opportunity to drive further growth in sales and unit volumes.

Storage Systems Customers

Our customers can be characterized into two major go-to-market categories:

*OEM Partners.* These channel customers independently resell or distribute OEM-branded or LSI Logic Storage Systems co-branded products, which may be integrated with value-added services, hardware and software and delivered as differentiated complete storage solutions to enterprises. OEM Partners receive basic training services to enhance their abilities to sell and support our products. After receiving our basic training services, OEM Partners independently market, sell and support our products, requiring limited ongoing product support from us.

*OEM+ Partners.* In addition to providing our OEM+ Partners with products and basic services as describe above, we also assist our OEM+ Partners with additional resources that may provide tailored, account-specific education, training and sales and marketing assistance, allowing our OEM+ Partners to leverage our storage products and industry expertise.

**Manufacturing**

Semiconductor Manufacturing

Our semiconductor manufacturing operations convert a product design from the development stages into integrated circuits. Manufacturing begins with wafer fabrication, where the design is transferred to silicon wafers through a series of processes, including photolithography, ion implantation, deposition of numerous films and the etching of these various films and layers. Each circuit on the wafer is tested in the wafer sort operation, the good circuits are identified and the wafer is then separated into individual die. Each good die is then assembled into a package using different standards and advanced assembly technologies. This package encapsulates the circuit for protection and allows for electrical connection to the printed circuit board. The final step in the manufacturing process is final test, where the finished devices undergo stringent and comprehensive testing using computer systems.

The wafer fabrication operation is very complex and costly, and the industry trend has been towards outsourcing a portion of or all of this operation to silicon foundries located throughout the world. The Company s strategy is a combination of internal and external fabrication. The majority of the Company s wafers are fabricated internally in Gresham, Oregon, which is equipped to manufacture wafers utilizing 0.35-micron and smaller technologies. The factory in Gresham is ISO-9002 and ISO-14000 certified, which are important internationally recognized standards for quality and environmental stewardship.

We outsource additional portions of our wafer volume to a variety of wafer foundries primarily in Taiwan, Malaysia and China. For the more advanced technologies, (0.13-micron and smaller), we have entered into joint development arrangements with foundry partners. These agreements provide us access to leading edge technology and additional wafer capacity.

In November 2003, the Company sold its Tsukuba, Japan wafer fabrication facility to ROHM Company Ltd. ( Rohm ), and we now purchase wafers from Rohm as a foundry provider for products using 0.35-micron and larger technologies.

Our final assembly and test operations are performed by independent subcontractors in the Philippines, Malaysia, South Korea, Taiwan, Hong Kong, Thailand and China. The Company has a long history of outsourcing these operations and offers a wide range of high performance packaging solutions for system-on-a-chip designs, including flip chip technology.

Development of advanced manufacturing technologies in the semiconductor industry frequently requires that critical selections be made as to those vendors from which essential equipment (including future enhancements) and after-sales services and support will be purchased. Some of our equipment selections require that we procure certain specific types of materials or components specifically designed to our specifications. Therefore, when we implement specific technology choices, we may become dependent upon certain sole-source vendors. Accordingly, our capability to switch to other technologies and vendors may be substantially restricted and a switch may involve significant expense and could delay our technology advancements and decrease manufacturing capabilities.

Storage Systems Manufacturing

We use third-party suppliers for standard components, such as disk drives and standard computer processors, which are designed and incorporated into our products. Additionally, we outsource the manufacturing of the majority of our product components, such as printed circuit boards, in order to take advantage of quality and cost benefits afforded by using third-party manufacturing services. We believe that using outsourced manufacturing services allows us to focus on product development and increases operational flexibility, both in terms of adjusting manufacturing capacity in response to customer demand and rapidly introducing new products.

The assembly of our storage system products involves integrating supplied components and manufactured sub-assemblies into final products, which are configured and rigorously tested before being delivered to our customers. The highly modularized nature of our storage system products allows for flexible assembly and delivery models, which include build-to-order, configure-to-order, direct shipment,

bulk shipment and local fulfillment services. We have implemented these models in an effort to reduce requisite lead times for delivery of our products and to provide channel customers with multiple manufacturing and delivery alternatives that best complement their operations.

- *United States Assembly.* Our wholly-owned United States manufacturing facility in Wichita, Kansas, assembles and tests complete storage systems and sub-assemblies configured from modular components, such as our storage controller modules and disk drive enclosure modules. ISO-9001 certification at our Kansas manufacturing facility has been maintained since April 1992. This facility has been certified ISO-9001:2000 compliant as of October 2001. Product quality is achieved through extensive employee training, exhaustive and automated testing and sample auditing. Quality control and measurement is extended through the subcomponent supplier and component manufacturer base with continuous reporting and ongoing qualification programs.

- *European Assembly.* We outsource manufacturing in Cork, Ireland, to a Flextronics International Ltd. facility. ISO-9001: 2000 certification at the Cork assembly facility has been maintained since December 2001. This facility is capable of the assembly and testing of complete storage systems and sub-assemblies configured from modular components, such as our storage controller modules and disk drive enclosure modules. The site in Ireland was established to provide operational flexibility in meeting surges in demand, address growing European demand and to serve as a backup site in the event of natural or human-made disasters that could disrupt the operations of our Wichita facility.

**Backlog**

Semiconductor Backlog

In the Semiconductor segment, we generally do not have long-term volume purchase contracts with our customers. Instead, customers place purchase orders that are subject to acceptance by us. The timing of the design activities for which we receive payment and the placement of orders included in our backlog at any particular time is generally within the control of the customer. For example, there could be a significant time lag between the commencement of design work and the delivery of a purchase order for the units of a developed product. Also, customers may from time to time revise delivery quantities or delivery schedules to reflect their changing needs. For these reasons, our backlog as of any particular date may not be a meaningful indicator of future annual sales.

Storage Systems Backlog

Due to the nature of our business, we maintain relatively low levels of backlog in the Storage Systems segment. Consequently, we believe that backlog is not a good indicator of future sales, and our quarterly revenues depend largely on orders booked and shipped in that quarter. Because lead times for delivery of our products are relatively short, we must build in advance of orders. This subjects us to certain risks, most notably the possibility that expected sales will not materialize, leading to excess inventory, which we may be unable to sell to our customers.

**Competition**

Semiconductor Competitors

The semiconductor industry is intensely competitive and characterized by constant technological change, rapid product obsolescence, evolving industry standards and price erosion. Many of our competitors are larger, diversified companies with substantially greater financial resources. Some of these are also customers who have internal semiconductor design and manufacturing capacity. We also compete with smaller and emerging companies whose strategy is to sell products into specialized markets or to provide a portion of the products and services that we offer.

Our major competitors in the Semiconductor segment include large companies such as Agere Systems, Inc., IBM Corporation, Philips Electronics, N.V., ST Microelectronics, Texas Instruments, Inc. and Toshiba Corporation. Other competitors in strategic markets include Adaptec, Inc., Broadcom Corporation, Cirrus Logic, Inc., Marvell Technology Group, Mediatek Corp. and NEC Corporation.

The principal competitive factors in the semiconductor industry include:

- design capabilities;

- differentiating product features;

- product performance characteristics;

- time to market;

- price;

- manufacturing processes; and

- utilization of emerging industry standards.

We believe that we presently compete favorably with respect to these factors. It is possible, however, that our competitors will develop other design solutions that could have a material adverse impact on our competitive position. Our competitors may also decide from time to time to aggressively lower prices of products that compete with us in order to sell related products or achieve strategic goals. Due to their customized nature, ASICs are not as susceptible to price fluctuations as standard products. However, strategic pricing by competitors can place strong pricing pressure on our products in certain transactions, resulting in lower selling prices and lower gross profit margins for those transactions.

The markets into which we sell our semiconductor products are subject to severe price competition. We expect to continue to experience declines in the selling prices of our semiconductor products over the life cycle of each product. In order to offset or partially offset declines in the selling prices of our products, we continue to reduce the costs of products through product design changes, manufacturing process changes, yield improvements and procurement of wafers from outsourced manufacturing partners. We do not believe that we can continually achieve cost reductions that fully offset the price declines of our products. Therefore, gross profit margin percentages will generally decline for existing products over their life cycles.

We are increasingly emphasizing our CoreWare design methodology and system-on-a-chip capability. Competitive factors that are important to the success of this strategy include:

- selection, quantity and quality of our CoreWare library elements;

- our ability to offer our customers system-level expertise; and

- quality of software to support system-level integration.

Although there are other companies that offer similar types of products and related services, we believe that we currently compete favorably with those companies. However, competition in this area is increasing, and there is no assurance that our CoreWare methodology approach and product offerings will continue to receive market acceptance. Customers in our targeted markets frequently require system-level solutions. Our ability to deliver complete solutions may also require that we succeed in obtaining licenses to necessary software and integrating this software with our semiconductors.

Storage Systems Competitors

The market for our storage system products is highly competitive, rapidly evolving and subject to changing technology, customer needs and new product introductions. We compete with products from large well-capitalized storage system companies such as EMC, Hitachi Data Systems and Network Appliance, as well as with other storage system and component providers, such as Adaptec, Dot Hill, Infortrend, XIOtech, Xyratex and the internal storage divisions of existing and potential channel customers. We also compete with internally developed products and, indirectly, through our channel customers, with third-party products being sold by major server vendors such as Dell, Hewlett-Packard and Sun Microsystems. The competitive factors affecting the market for our storage system products include:

features and functionality;

product performance and price;

reliability, scalability and data availability;

interoperability with other networking devices;

support for emerging industry and customer standards;

levels of training, marketing and customer support;

level of easily customizable features;

quality and availability of supporting software;

quality of system integration; and

technical services and support.

We believe that we compete effectively with our competitors on the basis of these factors. Our ability to remain competitive will depend to a great extent upon our ongoing performance in the areas of product development and customer support. To be successful in the future, we believe that we must respond promptly and effectively to the challenges of technological change and our competitors innovations by continually enhancing our product offerings. We must also continue to aggressively recruit and retain employees highly qualified and technically experienced in hardware and software development in order to achieve industry leadership in product development and support.

**Patents, Trademarks and Licenses**

We maintain a patent program, and believe that our patents and other intellectual property rights have value to our business. We have filed a number of patent applications and currently hold more than 2,600 issued United States ( U.S. ) patents and additional issued foreign patents, expiring from 2004 to 2023, relating to certain of our products and technologies in both the Semiconductor and the Storage Systems segments. In both segments, we also maintain trademarks for certain of our products and services and claim copyright protection for certain proprietary software and documentation. Patents, trademarks and other forms of protection for our intellectual property are important, but we believe our future success principally depends upon the technical competence and creative skills of our employees.

We continue to expand our portfolio of patents and trademarks. We offer a staged incentive to engineers to identify, document and submit invention disclosures. We have developed an internal review procedure to maintain a high level of disclosure quality and to establish priorities and plans for filings both in the United States and abroad. The review process is based solely on engineering and management judgment, with no assurance that a specific filing will issue or, if issued, will deliver any lasting value to us. There is no assurance that the rights granted under any patent will provide competitive advantages to us or will be adequate to safeguard and maintain our proprietary rights. Moreover, the laws of certain countries in which our products are or may be manufactured or sold may not protect our products and intellectual property rights to the same extent as the U.S. legal system.

As is typical in the high technology industry, from time to time, we have received communications from other parties asserting that certain of our products, processes, technologies or information infringe

upon their patent rights, copyrights, trademark rights or other intellectual property rights. We regularly evaluate such assertions. In light of industry practice, we believe that, with respect to existing or future claims, any licenses or other rights that may be necessary can generally be obtained on commercially reasonable terms. Nevertheless, there is no assurance that licenses will be obtained on acceptable terms or that a claim will not result in litigation or other administrative proceedings.

In the Semiconductor segment, we protect our trade secrets and other proprietary information through agreements with our customers, suppliers, employees and consultants, and through other security measures. We have entered into certain cross-license agreements that generally provide for the non-exclusive licensing of rights to design, manufacture and sell products and, in some cases, for cross-licensing of future improvements developed by either party.

In the Storage Systems segment, we own a portfolio of patents and patent applications concerning a variety of storage technologies. We also maintain trademarks for certain of our products and services and claim copyright protection for certain proprietary software and documentation. Similar to the Semiconductor segment, we protect our trade secrets and other proprietary information through agreements and other security measures, and have implemented internal procedures to identify patentable inventions and pursue protection in selected jurisdictions.

Please see Item 3, Legal Proceedings for information regarding pending patent litigation against the Company. Please also refer to the additional risk factors set forth in the Risk Factors section and Note 13 of the Notes to the Consolidated Financial Statements ( Notes ) for additional information.

**Research and Development**

Our industry is characterized by rapid changes in products, design tools and process technologies. We must continue to improve our existing products, design-tool environment and process technologies, and to develop new ones in a cost-effective manner to meet changing customer requirements and emerging industry standards. If we are not able to successfully introduce new products, design tools and process technologies or to achieve volume production of products at acceptable yields using new manufacturing processes, there could be a material adverse impact on our operating results and financial condition.

We operate the majority of our research and development facilities in Arizona, California, Colorado, Georgia, Kansas, Maryland, Minnesota, Oregon, Texas, Washington, Canada, Germany and the United Kingdom. The following table shows our expenditures on research and development activities for each of the last three fiscal years (in thousands).

| YEAR | AMOUNT | PERCENT OF REVENUE |
|---|---|---|
| 2003 | $ 432,695 | 26% |
| 2002 | $ 457,351 | 25% |
| 2001 | $ 503,108 | 28% |

Research and development activities expenses primarily consist of materials expenses, salaries and related costs of employees engaged in ongoing research, design and development activities and subcontracting costs.

**Working Capital**

Information regarding our working capital practices is incorporated herein by reference from Item 7 of Part II hereof under the heading Management s Discussion and Analysis of Financial Condition and Results of Operations Financial Condition, Capital Resources and Liquidity.

**Financial Information about Segments and Geographic Areas**

This information is included in Note 12 ( Segment and Geographic Information ) of the Notes, which information is incorporated herein by reference from Item 8 of Part II.

For a discussion of various risks attendant to foreign operations, see (1) Risk Factors in this Item 1, in particular We are exposed to fluctuations in foreign currency exchange rates, We procure parts and raw materials from limited domestic and foreign sources, and Our global operations expose the Company to numerous international business risks, and (2) the section in Item 7A of Part II entitled Foreign Currency Exchange Risk. This information is incorporated herein by reference.

**Environmental Regulation**

Federal, state and local regulations, in addition to those of other nations, impose various environmental controls on the use and discharge of certain chemicals and gases used in semiconductor and storage product processing. Our facilities have been designed to comply with these regulations through the implementation of environmental management systems. We believe that our activities conform to current environmental regulations. However, increasing public attention has been focused on the environmental impact of electronics and semiconductor manufacturing operations. While to date we have not experienced any material adverse impact on our business from environmental regulations, we cannot provide assurance that such regulations will not be amended so as to impose expensive obligations on us in the future. In addition, violations of environmental regulations or impermissible discharges of hazardous substances could result in the necessity for the following actions:

- additional capital improvements to comply with such regulations or to restrict discharges;
- liability to our employees and/or third parties; and/or
- business interruptions as a consequence of permit suspensions or revocations or as a consequence of the granting of injunctions requested by governmental agencies or private parties.

**Employees**

As of December 31, 2003, we had 4,722 full-time employees, of which 905 were employees of our Storage Systems segment.

In February 2003, the Company downsized operations, which resulted in the reduction in work force of 210 employees. In April 2003, in an effort to streamline operations and better align operating expenses with projected revenues, the Company announced a restructuring of our operations that included, among other things, the reduction in work force of 325 employees. In September 2003, the Company decided to discontinue certain development programs and to refocus sales and marketing efforts for certain product lines in the Semiconductor segment, which caused the reduction in work force by 97 employees primarily involved in research and development. In November 2003, we sold our Tsukuba, Japan manufacturing facility to Rohm Company Ltd. As a result of this sale, the Company s work force was reduced by 169 employees.

Our future success depends upon the continued service of our key technical and management personnel and on our ability to continue to attract and retain qualified employees, particularly those highly skilled design, process and test engineers involved in the manufacture of existing products and the development of new products and processes. We currently have favorable employee relations, but the competition for technical personnel is intense, and the loss of key employees or the inability to hire such employees when needed could have a material adverse impact on our business and financial condition.

**Seasonality**

The Company s business is largely focused on the information technology and consumer products markets. Due to seasonality in these markets, the Company typically expects to see stronger growth in the last two quarters of the year.

## RISK FACTORS

*Keep these risk factors in mind when you read forward-looking statements elsewhere in this Form 10-K and in the documents incorporated herein by reference. These are statements that relate to our expectations for future events and time periods. Generally, the words, anticipate, expect, intend and similar expressions identify forward-looking statements. Forward-looking statements involve risks and uncertainties, and actual results could differ materially from those anticipated in the forward-looking statements.*

***A general economic weakness may further reduce our revenues.*** The semiconductor industry is cyclical in nature and is characterized by wide fluctuations in product supply and demand. Since 2001, our financial condition and results of operations have been significantly adversely affected by the weakness in the U.S. economy. While we are unable to quantify the effect that the weakened U.S. economy has had on our financial condition and results of operations, we note, for example, that our revenue declined from approximately $2.7 billion in 2000 to approximately $1.8 billion in 2001, and from approximately $1.8 billion in 2002 to approximately $1.7 billion in 2003. In addition, we had net income of approximately $237 million in 2000 compared with net loss of approximately $992 million in 2001, and our net loss increased from approximately $292 million in 2002 to approximately $309 million in 2003. Our results of operations are becoming increasingly dependent on the global economy. Any geopolitical factors such as additional terrorist activities, armed conflict or global health conditions may adversely affect the global economy, which may affect our recovery in 2004 and adversely impact our operating results and financial condition. In addition, goodwill and other long-lived assets could be impacted by a further decline in revenues because an impairment is measured based upon estimates of future cash flows. These estimates include assumptions about future conditions within our company and industry.

***LSI Logic Storage Systems, Inc., which consists of our Storage Systems segment, represents a significant portion of our business, and an initial public offering, sale or spin-off of the Storage Systems segment, may cause our operating results to suffer and may cause net revenues and income to decline.***

LSI Logic Storage Systems, Inc. represents a significant portion of our business, and it is currently reported as a separate segment in our consolidated financial statements. For the fiscal years ended 2003, 2002 and 2001, the Storage Systems segment represented 25%, 18% and 12% of our revenues, respectively. In addition, the Storage Systems segment has recently been profitable, while the Semiconductor segment has not. For the year ended 2003, the Storage Systems segment accounted for an income from operations of $23 million, in contrast to a loss from operations of $296 million for the Semiconductor segment.

If we engage in another transaction that results in Storage Systems no longer being a subsidiary of the Company, the Storage Systems segment s financial results, including its net revenues and net income, will no longer be included in the Company s consolidated financial statements. Consequently, our financial results may be harmed as a result of a spin-off of the currently-profitable Storage Systems business, which may cause our stock price to decline. Accordingly, the historical consolidated financial information for the Company may not necessarily reflect the financial position, results of operations and cash flows after Storage Systems ceases to be a subsidiary. In addition, after the possible spin-off, each company would be more vulnerable to the cyclical nature of each of their respective industries as a result of their focus on only one industry segment.

***The separation and possible IPO, sale or spin-off of LSI Logic Storage System, Inc., from the Company is a substantial undertaking that may disrupt the Company s ongoing business and may increase expenses, which may affect the Company s results of operations or financial condition.***

The planning and implementation of the separation of LSI Logic Storage Systems from the Company, and the possible initial public offering of the subsidiary s common stock to the public and the potential and spin-off of the subsidiary to the Company s stockholders will require the substantial dedication of management resources. Furthermore, we expect to incur significant expenses in future periods related to the separation. We have not yet made any adjustments to our historical financial information to reflect the significant changes that may occur in our cost structure, funding and operations as a result of the separation. In addition, the efforts required to separate LSI Logic Storage Systems from us may disrupt our ongoing business activities, may result in employee distraction and may harm LSI Logic Storage Systems and our ability to attract, retain and motivate key employees. If any of the foregoing occurs, our results of operations or financial condition would suffer.

***We operate in highly competitive markets.*** The Semiconductor and Storage Systems segments in which we conduct business are characterized by rapid technological change, short product cycles and evolving industry standards. We believe our future success depends, in part, on our ability to improve on existing technologies and to develop and implement new ones in order to continue to reduce semiconductor chip size and improve product performance and manufacturing yields. We must also be able to adopt and implement emerging industry standards in a timely manner and to adapt products and processes to technological changes. If we are not able to implement new process technologies successfully or to achieve volume production of new products at acceptable yields, our operating results and financial condition may be adversely impacted.

Our competitors include many large domestic and foreign companies that have substantially greater financial, technical and management resources than we do. Several major diversified electronics companies offer ASIC products and/or other standard products that are competitive with our product lines. Other competitors are specialized, rapidly growing companies that sell products into the same markets that we target. Some of our large customers may develop internal design and production capabilities to manufacture their own products, thereby displacing our products. There is no assurance that the price and performance of our products will be superior relative to the products of our competitors. As a result, we may experience a loss of competitive position that could result in lower prices, fewer customer orders, reduced revenues, reduced gross profit margins and loss of market share.

***Our new products may not achieve market acceptance.*** We introduce many new products each year. We must continue to develop and introduce new products that compete effectively on the basis of price and performance and that satisfy customer requirements. We continue to emphasize engineering development and acquisition of CoreWare building blocks and integration of our CoreWare libraries into our design capabilities. Our cores and standard products are intended to be based upon industry standard functions, interfaces and protocols so that they are useful in a wide variety of systems applications. Development of new products and cores often requires long-term forecasting of market trends, development and implementation of new or changing technologies and a substantial capital commitment. We cannot provide assurance that the cores or standard products that we select for investment of our financial and engineering resources will be developed or acquired in a timely manner or will enjoy market acceptance.

***We operate highly complex and costly manufacturing facilities.*** Our wafer fabrication site located in Gresham, Oregon is a highly complex, state-of-the-art facility. In addition, we own our Storage Systems manufacturing facility in Wichita, Kansas. The manufacture and introduction of our products is a complicated process. We continually strive to implement the latest process technologies and manufacture products in a clean and tightly controlled environment. We confront challenges in the manufacturing process that require us to:

- maintain a competitive manufacturing cost structure;

- implement the latest process technologies required to manufacture new products;

- exercise stringent quality control measures to ensure high yields;

- effectively manage the subcontractors engaged in the wafer fabrication, test and assembly of products; and

- update equipment and facilities as required for leading edge production capabilities.

***We outsource a substantial portion of wafers manufactured.*** The Company has consolidated its internal semiconductor manufacturing in Gresham, Oregon. The Company has developed outsourcing arrangements for the manufacture of some of its products based on process technology that is unique to the supplier. There is no assurance that the third party manufacturer will be able to produce and deliver wafers that meet the Company s specifications or that it will be able to provide successfully the process technology it has committed. If the third party is not able to deliver products and process technology on a timely and reliable basis, the Company s results of operations could be adversely affected.

***We have significant capital requirements to maintain and grow our business.*** We continue to make significant investments in our facilities and capital equipment, and, as a result, our fixed costs for manufacturing remain high. We also seek to obtain access to advanced manufacturing capacities through strategic supplier alliances with wafer foundries. In general, we seek to optimally allocate the manufacture of our products between our facilities and those of our foundry suppliers. Nonetheless, a high level of capital expenditures in our facilities results in relatively high fixed costs. If demand for our products does not absorb the available capacity, the fixed costs and operating expenses related to our production capacity could have a material adverse impact on our operating results and financial condition.

We finance our capital expenditure needs from operating cash flows, bank financing and capital market financing. As of December 31, 2003, we had convertible notes outstanding of approximately $840 million. Also as of December 31, 2003, we have two operating leases financed by several commercial banks. We may need to seek additional equity or debt financing from time to time and cannot be certain that additional financing will be available on favorable terms. Moreover, any future equity or equity-linked financing may dilute the equity ownership of existing stockholders.

***We are exposed to fluctuations in foreign currency exchange rates.*** We have some exposure to fluctuations in foreign currency exchange rates. We have international subsidiaries and distributors that operate and sell our products globally. We routinely hedge these exposures in an effort to minimize the impact of currency fluctuations. However, we may still be adversely affected by changes in foreign currency exchange rates or declining economic conditions in these countries.

***We procure parts and raw materials from limited domestic and foreign sources.*** We do not maintain an extensive inventory of parts and materials for manufacturing. We purchase a portion of our requirements for parts and raw materials from a limited number of sources, primarily from suppliers in Japan and their U.S. subsidiaries, and we obtain other material inputs on a local basis. There is no assurance that, if we have difficulty in obtaining parts or materials in the future, alternative suppliers will be available, or that these suppliers will provide parts and materials in a timely manner or on favorable terms. As a result, we may be adversely affected by delays in product shipments. If we cannot obtain adequate materials for manufacture of our products, there could be a material adverse impact on our operating results and financial condition.

***We are dependent on a limited number of customers.*** We have a highly concentrated customer base and we are increasingly dependent on a limited number of customers for a substantial portion of revenues as a result of our strategy to focus our marketing and selling efforts on select, large-volume customers. Sony and IBM represented 13% and 15%, respectively, of our total consolidated revenues for the year ended December 31, 2003.

Our operating results and financial condition could be significantly affected if:

- we do not win new product designs from major existing customers;

- major customers reduce or cancel their existing business with us;

- major customers make significant changes in scheduled deliveries; or

- there are declines in the prices of products that we sell to these customers.

***We utilize indirect channels of distribution over which we have limited control.*** We derive a material percentage of product revenues from independent reseller and distributor channels. Our financial results could be adversely affected if our relationship with these resellers or distributors were to deteriorate or if the financial condition of these resellers or distributors were to decline. Given the current economic environment, the risk of distributors going out of business is significantly increased. In addition, as our business grows, we may have an increased reliance on indirect channels of distribution. There can be no assurance that we will be successful in maintaining or expanding these indirect channels of distribution. This could result in the loss of certain sales opportunities. Furthermore, the partial reliance on indirect channels of distribution may reduce our visibility with respect to future business, thereby making it more difficult to accurately forecast orders.

***Our operations are affected by cyclical fluctuations.*** The Semiconductor and Storage Systems segments in which we compete are subject to cyclical fluctuations in demand. The Semiconductor industry has in the past experienced periods of rapid expansion of production capacity followed by periods of significant downturn. Even when the demand for our products remains constant, the availability of additional excess production capacity in the industry creates competitive pressure that can degrade pricing levels, which can reduce revenues. Furthermore, customers who benefit from shorter lead times may defer some purchases to future periods, which could affect our demand and revenues in the short term. As a result, we may experience downturns or fluctuations in demand in the future and experience adverse effects on our operating results and financial condition.

***We engage in acquisitions and alliances giving rise to economic and technological risks.*** We are continually exploring strategic acquisitions that build upon our existing library of intellectual property, human capital and engineering talent, and increase our leadership position in the markets where we operate. We did not complete any material acquisitions or alliances in 2003. We completed two acquisitions in 2002 and two acquisitions in 2001. Mergers and acquisitions of high-technology companies bear inherent risks. No assurance can be given that our previous or future acquisitions will be successful and will not materially adversely affect our business, operating results or financial condition. We must manage any growth effectively. Failure to manage growth effectively and to integrate acquisitions could adversely affect our operating results and financial condition.

In addition, we intend to continue to make investments in companies, products and technologies through strategic alliances. Investment activities often involve risks, including the need to acquire timely access to needed capital for investments related to alliances and to invest in companies and technologies that contribute to the growth of our business.

***The price of our securities may be subject to wide fluctuations.*** Our stock has experienced substantial price volatility, particularly as a result of quarterly variations in results, the published expectations of analysts and announcements by our competitors and us. In addition, the stock market has experienced price and volume fluctuations that have affected the market price of many technology companies and that have often been unrelated to the operating performance of such companies. The price of our securities may also be affected by general global, economic and market conditions. While we cannot predict the individual effect that these and other factors may have on the price of our securities, these factors, either individually or in the aggregate, could result in significant variations in price during any given period of time. These fluctuations in our stock price also impact the price of our outstanding convertible securities and the likelihood of the convertible securities being converted into cash or equity. If our stock price is below the conversion price of our convertible bonds on the date of maturity, they may not convert into equity and we may be required to redeem the convertible securities for cash. However, in the event they do not convert to equity, we believe that our current cash position and expected future operating cash flows will be adequate to meet these obligations as they mature.

***We may rely on capital and bank markets to provide liquidity.*** In order to finance strategic acquisitions, capital assets needed in our manufacturing facilities and other general corporate needs, we may rely on capital and bank markets to provide liquidity. Historically, we have been able to access capital and bank markets, but this does not necessarily guarantee that we will be able to access these markets in the future or at terms that are acceptable to us. The availability of capital in these markets is affected by several factors, including geopolitical risk, the interest rate environment and the condition of the economy as a whole. In addition, our own operating performance, capital structure and expected future performance impact our ability to raise capital. We believe that our current cash, cash equivalents, short-term investments and future cash provided by operations will be sufficient to fund our needs in the foreseeable future. This includes repaying our existing convertible debt when due. However, if our operating performance falls below expectations, we may need additional funds.

***We design and develop highly complex cell-based ASICs.*** As technology advances to 0.13 micron and smaller geometries, there are increases in the complexity, time and expense associated with the design, development and manufacture of ASICs. We must incur substantial research and development costs to confirm the technical feasibility and commercial viability of any ASIC products that in the end may not be successful. Therefore, the Company cannot guarantee that any new ASIC products will result in market acceptance.

***Our global operations expose the Company to numerous international business risks.*** We have substantial business activities in Asia and Europe. Both manufacturing and sales of our products may be adversely impacted by changes in political and economic conditions abroad. A change in the current tax laws, tariff structures, export laws, regulatory requirements or trade policies in either the United States or foreign countries could adversely impact our ability to manufacture or sell our products in foreign markets. Moreover, a significant decrease in sales by our customers to end users in either Asia or Europe could result in a decline in orders.

We subcontract wafer manufacturing, test and assembly functions to independent companies located in Asia. A reduction in the number or capacity of qualified subcontractors or a substantial increase in pricing could cause longer lead times, delays in the delivery of products to customers or increased costs.

***The high technology industry in which we operate is prone to intellectual property litigation.*** Our success is dependent in part on our technology and other proprietary rights, and we believe that there is value in the protection afforded by our patents, patent applications and trademarks. The Company has a program whereby it actively protects its intellectual property by acquiring patent and other intellectual property rights. However, the industry is characterized by rapidly changing technology and our future success depends primarily on the technical competence and creative skills of our personnel.

As is typical in the high technology industry, from time to time we have received communications from other parties asserting that certain of our products, processes, technologies or information infringe upon their patent rights, copyrights, trademark rights or other intellectual property rights. We regularly evaluate such assertions. In light of industry practice, we believe, with respect to existing or future claims that any licenses or other rights that may be necessary can generally be obtained on commercially reasonable terms. Nevertheless, there is no assurance that licenses will be obtained on acceptable terms or that a claim will not result in litigation or other administrative proceedings. Resolution of whether the Company s product or intellectual property has infringed on valid rights held by others could have a material adverse effect on the Company s financial position or results of operations and may require material changes in production processes and products.

The Company is currently involved in several patent litigation matters. See Legal Matters in Note 13 ( Commitments and Contingencies ) of the Notes.

***Our manufacturing facilities may not achieve desired margins.*** Anticipated production rates of our Gresham manufacturing facility depend upon the reliable operation and effective integration of a variety of hardware and software components. There is no assurance that all of these components will be fully

functional or successfully integrated on time or that the facility will achieve the forecasted yield targets. The capital expenditures required to bring the facility to full operating capacity may be greater than we anticipate and result in lower margins.

***Our manufacturing facilities are subject to disruption***. Operations at any of our primary manufacturing facilities, or at any of our wafer fabrication, test and assembly subcontractors, may be disrupted for reasons beyond our control, including work stoppages, fire, earthquake, tornado, floods or other natural disasters, which could have a material adverse effect on the Company s financial position or results of operation.

***We must attract and retain key employees in a highly competitive environment.*** Our employees are vital to our success and our key management, engineering and other employees are difficult to replace. We do not generally have employment contracts with our key employees. Despite the economic slowdown of the last few years, competition for certain key technical and engineering personnel remains intense. Our continued growth and future operating results will depend upon our ability to attract, hire and retain significant numbers of qualified employees.

**Item 2.** ***Properties***

The Company s 594,000 square foot Milpitas, California facilities are leased and contain the Company s corporate executive headquarters, administration and engineering offices. Storage Systems shares 15,000 square feet of the Milpitas, facility with the Company. The Company maintains 101,000 square feet of leased facilities in Fremont, California, housing engineering offices, logistics and warehouses and 95,800 square feet of leased facilities in San Jose, California, housing engineering offices (of which the Company subleases 39,000 square feet).

The Company owns the land and buildings housing its 588,000 square foot manufacturing facilities for the Semiconductor segment in Gresham, Oregon. The Company also owns the land and buildings housing sales and engineering offices in Fort Collins and Colorado Springs, Colorado, and owns the logistics center in Tsuen Wan, Hong Kong. The Company sold the Tsukuba, Japan manufacturing facility in November 2003. The Company closed the Colorado Springs semiconductor manufacturing facility in October 2001 and is in the process of disposing and selling its assets.

In the Storage Systems segment, the Company owns the manufacturing and executive offices site in Wichita, Kansas, which includes 330,000 square feet of space, and in a leased facility in Boulder, Colorado, which consists of 43,725 square feet. The Company also leases 15,000 square feet of additional office facilities in Wichita.

In addition, the Company maintains leased sales and engineering offices, regional office space for its field sales, marketing and design center offices for both its Semiconductor segment and its Storage Systems segment at various locations in North America, Europe, Japan and elsewhere in Asia. The Company also maintains leased executive offices, design centers and sales offices in Bracknell, United Kingdom and Tokyo, Japan. Leased facilities described above are subject to operating leases that expire in 2004 through 2011. (See Note 13 of the Notes.)

We believe that our existing facilities and equipment are well maintained, in good operating condition, suitable for our operations and are adequate to meet our current requirements.

**Item 3.** ***Legal Proceedings***

This information is included in Note 13 ( Commitments and Contingencies ) of the Notes, which information is incorporated herein by reference from Item 8 of Part II hereof.

**Item 4.** ***Submission of Matters to a Vote of Security Holders***

Not applicable.

**Executive Officers of the Company**

The executive officers of the Company, who are elected by and serve at the discretion of the Board of Directors, are as follows. Their ages are as of December 31, 2003.

**Name**